

Mosquito Lake Restoration Project Environmental Assessment

USDA Forest Service

Saguache Ranger District, Rio Grande National Forest

Saguache County, Colorado



May 2012

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Chapter 1: Purpose and Need

1.1 Proposal: The Rio Grande National Forest proposes to dredge approximately 7,500 cubic yards of sediment material from Mosquito Lake, which is located approximately 5 miles North West of the Town of Bonanza. Sediment materials will be deposited at the end of Forest Service Road 862.2D (Upper Kerber Creek). The deposit site is located approximately 100 yards from the Lake and is the proposed site of a future parking area. In addition to dredging, and due to continued spring down-cutting of the lake's outlet, the outlet will be reinforced with hand placed rocks to provide future stabilization. Dredging is expected to occur in the summer of 2012 and parking area construction in 2013 or 2014.

1.2 Project need: Historically, Mosquito Lake provided a unique recreational opportunity, because it was the only vehicle accessible fishing lake on the Saguache District. However, the lake has not supported fish for many years now due to decreasing water depths. Colorado Parks and Wildlife fisheries personnel have recommend minimum water depths of 8-10 ft. to support trout at this high altitude (10,800 ft.) location. Current water depths are 3-4 ft. at this time. The lake may freeze solid some years at this depth. The Saguache Ranger District proposes to dredge 5 ft. of sediments over approximately 1 acre of the lake's bottom to increase the lakes depth and restore suitable trout habitat conditions.

Currently the road to Mosquito Lake is a single lane logging road, with no turn around capability at its end. Vehicles must back up the road around a blind corner to find adequate space to turn around, creating a public safety issue.

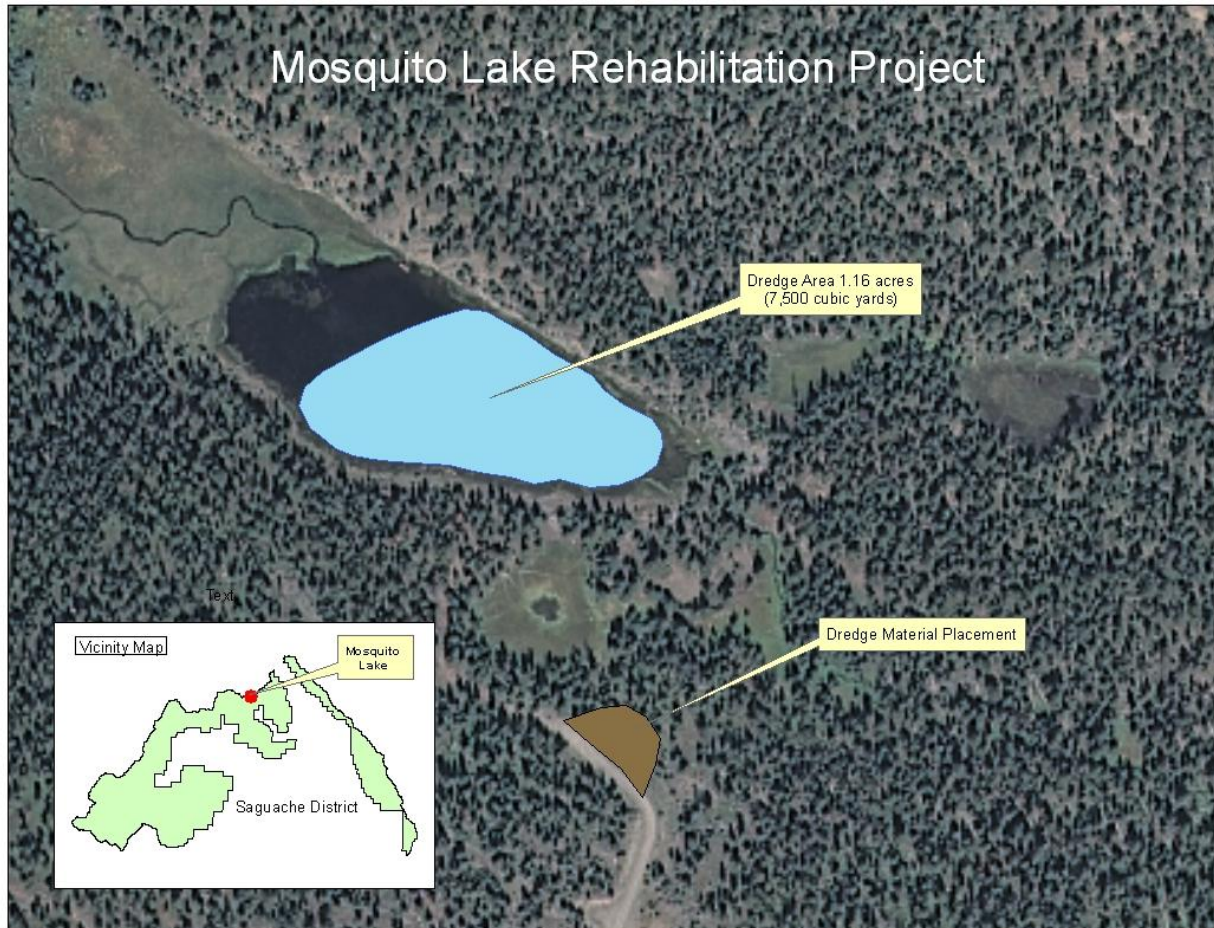
1.3 Project objectives: Project objectives are to restore Mosquito Lake as a viable fishery, while providing a recreational opportunity to members of the public. The development of a parking area as part of this project is to reduce public safety concerns associated with turning vehicles around under current road conditions and reduce resource impacts from vehicles turning around on unimproved surfaces.

Other activities associated with this project are:

- Pumping the lake dry before dredging operations begin.
- Mat or provide alternative protection for emergent vegetation at equipment crossing location.
- Improve existing two-track from the end of FSR 862.2D (Upper Kerber Creek Road) to Mosquito Lake to allow equipment access for dredging operations.
- Remove trees from dredge material deposit site and existing two-track as necessary for project operations (Number of removals estimated at approximately 200 trees - 33 > 8" in diameter).
- Installation of a hardened crossing across drainage bottom as part of 2-track improvements.
- Obtain borrow material to cover dredge material deposits from adjacent uphill side of FS Road 862.2D for parking area and turn around development.

- Rehabilitation of disturbed sites following project activities (seeding and waddle installation).
- Gate installation across the end of FS Road 862.2D following dredging operations for administrative use only.

Figure 1. Project location Map



1.4 Laws and regulations: Laws, regulations or other EISs/EAs that influence the scope of this EIS/ES.

- **National Environmental Policy Act (NEPA) 1969:** The NEPA [(Pub. L. No. 91-190) (42 U. S. C. 4321 et seq.)] Applies to major Federal actions (e.g., proposals, permits, and legislation) that may significantly affect the environment.
- **Clean Water Act, Section 404, Wetlands, US EPA:** US Army Corp of Engineers regulates activities in the areas of dredging and disposal, including regulatory actions that come under NEPA jurisdiction.
- **Colorado Department of Public Health and Environment:** Water Quality Control Division, Clean Water Act 401 Water Quality Certification.

- **Forestwide Objectives:** Regional objective 1.4 – Maintain sport-fishing opportunities by providing quality fishery habitat. Support the maintenance of native fishing species by protecting existing suitable habitats for both natural and reintroduced populations. LMRP chapter II-2.
- **USFS Water Function Handbook #2509**

1.5 Decision to be made: The Decision to be made is to dredge Mosquito Lake and create a parking area, dredge the lake and leave Upper Kerber Creek Road as it currently exists, or not do the project at all. Other cooperating agencies included in this analysis are the Corp of Engineers, EPA, Division of Water Resources, Colorado Parks and Wildlife and Colorado Department of Public Health and Environment.

1.6 Scoping / Public involvement: Scoping for the Mosquito Lake Restoration Project began on January 14, 2012 thru February 17th in the Valley Courier. Notice was followed by the Saguache Crescent on January 19, 2012 thru February 17th. In addition, the notice was broadcast as a public service announcement by a local radio station during the scoping period.

Internal Forest Service scoping began on January 30, 2012 during the initial Interdisciplinary Team Meeting. Items discussed as potential issues included:

- ✓ Management prescription conflict - considered but rejected as issue
- ✓ Dredge material placement - issue
- ✓ 2-track improvement - considered but rejected as issue
- ✓ Outlet improvement - considered but rejected as issue
- ✓ Breaching the lake's seal - issue
- ✓ Water Quality - issue
- ✓ Protection of emergent vegetation - issue

1.7 Permits /licenses: COE 404 permit, Division of water resources SWSP, Colorado Department of Public Health and Environment.

Chapter 2: Alternatives Including the Proposed Action

2.1 Chapter introduction: This chapter describes the alternatives considered for this potential Forest Service action and compares the alternatives in terms of their environmental impacts.

2.2 Alternatives:

2.2.1 Alternative A: The No Action Alternative would mean an absence of intervention into the declining water level of Mosquito Lake. Restoration of any recreational fishing or road improvements at the end of FS road 862.2D would not occur. No ground disturbing activities would occur under this alternative.

Past actions that exist in the area of this proposed project include a timber sale in 1954, the construction of road 862.2D (Upper Kerber Creek Road) in 1980 and associated Kerber-Antero timber sale activities in 1985-86.

A likely future foreseeable result of the No Action Alternative would be the loss of Mosquito Lake due to continued down-cutting of the lake's outlet to the point of being reduced to a wetland or stream channel over time.

- 2.2.2 **Alternative B:** The Proposed Alternative is to restore Mosquito Lake as a recreational fishery. This would be accomplished through a contract to dredge approximately 5 feet (7,500 cu. yds.) of sediment material from 1 acre of the lake's bottom, thus increasing the lake's current water depth of 3-4 feet on average, to a maximum depth of approximately 9 feet.

Before dredging could begin, several preceding actions would be required.

- Remove approximately 200 conifers from deposit site and along 2-track for dredge material relocation.
- Pump existing water from Mosquito Lake.
- Collect continuing stream flow into a collection pit. Allow for continued pumping of water around dredge area.
- Implement 2-track improvements as necessary, consisting of cut and fill excavation to provide equipment and administrative access to Mosquito Lake.
- Install a hardened crossing where the existing 2-track crosses a drainage that leads to the wetland on the south-east corner of the lake.

Down cutting of the lake's outlet has been occurring for several years. To prevent further erosion, the outlet will be reinforced with hand placed rocks to stabilize the outlet and return the lake to its previous 2009 level. Evidence of the lake's 2009 water level can be seen on the large rock (6 foot diameter) in the North West corner of the lake.

Upon completion of dredging operations, a gate will be installed across the end of Upper Kerber Creek road, by FS personnel to restrict vehicle access to the lake. Administrative access will be maintained to allow Colorado Parks and Wildlife (CPW) personnel access for fish stocking purposes.

Project operations would include:

- Improve 2-track for equipment access.
- Dredging approximately 1 acre of lake bottom.
- Post project naturalization of the deposit site, by contouring and seeding, once materials are sufficiently dry to be worked by Forest Service personnel.
- Rock stabilization of lake outlet (See Figure 2).
- Gate installation at the end of Upper Kerber Creek road.

Past actions that exist in the area of this proposed project include a timber sale in 1954, the construction of road 862.2D (Upper Kerber Creek Road) in 1980 and associated Kerber-Antero timber sale activities in 1985-86.

Future foreseeable actions that are not part of this proposed action may include the development of an information kiosk near the parking area.

Mosquito Lake recreational opportunities fall within a 5.13 management prescription area. Therefore, should conflicting uses arise; timber management activities should take precedence over recreational activities in this area.

- 2.2.3 **Alternative C:** The Preferred Alternative is to restore Mosquito Lake as a recreational fishery. This would be accomplished through a contract to dredge approximately 5 feet (7,500 cu. yds.) of sediment material from 1 acre of the lake's bottom, thus increasing the lake's current water depth of 3-4 feet on average, to a depth of approximately 9 feet.

Before dredging could begin, several preceding actions would be required.

- Remove approximately 200 conifers from deposit site and along 2-track for dredge material relocation.
- Pump existing water from Mosquito Lake.
- Collect continuing stream flow into a collection pit. Allow for continued pumping of water around dredge area.
- Implement 2-track improvements as necessary, consisting of cut and fill excavation to provide equipment and administrative access to Mosquito Lake.
- Install a hardened crossing where the existing 2-track crosses a drainage that leads to the wetland on the south-east corner of the lake.

Down cutting of the lake's outlet has been occurring for several years. To prevent further erosion, the outlet will be reinforced by FS personnel with hand placed rocks to stabilize the outlet and return the lake to its previous 2009 level. Evidence of the lake's 2009 water level can be seen on the large rock (6 foot diameter) in the North West corner of the lake.

Parking at Mosquito Lake can currently accommodate potentially only two vehicles. In order to turn around, it is necessary for vehicles to back up approximately 150 feet around a blind corner. This creates a safety issue for visitors to Mosquito the Lake. In an attempt to mitigate this safety concern and improve the visitor experience, dredge materials will be placed off the lower side of Upper Kerber Creek road, near its end, to provide foundation material for a parking area. Once the dredge material has dried sufficiently to be excavated, the Forest Service road crew will level and form the base of a 50 foot parking area with the dried dredge material. Approximately 20 feet of borrow material will then be excavated from the bank on the uphill side of the road to provide suitable surface material for the parking area.

Upon completion of dredging operations, a gate will be installed across the end of Upper Kerber Creek road, by Forest Service personnel to restrict vehicle access to the lake. Administrative access will be maintained to allow CPW personnel access for fish stocking purposes.

Project operations would include:

- Dredging approximately 1 acres of lake bottom.
- Rock stabilization of lake outlet (See figure 2).
- Contouring of deposit site materials to create parking area base once materials have dried sufficiently to be worked by Forest Service personnel.
- Construction of a 50 ft. parking area with on-site borrow material surface.
- Gate installation at the end of Upper Kerber Creek road.

Figure 2. Lake outlet



Past actions that exist in the area of this proposed project include a timber sale in 1954, the construction of road FSR 862.2D in 1980 and associated Kerber-Antero timber sale activities in 1985-86.

Future foreseeable actions that are not part of this proposed action may include the development of an information kiosk.

Mosquito Lake recreational opportunities fall within a 5.13 management prescription area. Therefore, should conflicting uses arise; timber management activities should take precedence over recreational activities in this area.

2.3 Alternative development: Alternatives were developed based on scoping, aerial photographs of the area, site visits, discussions with Colorado Parks and Wildlife biologists, Colorado Division of Water Resources personnel, Jeff and Cindy Dragos

(Ranchers), Corp Of Engineer (COE) personnel, Environmental Protection Agency personnel, US Forest Service Engineers, US Forest Service Hydrologist, US Forest Service Soil Scientist, Interdisciplinary Team Members and the District Ranger. The preferred alternative is believed to best meet Forest Service goals, while meeting the requirements of all involved agencies.

2.4 Additional alternatives considered: Additional alternatives considered, but eliminated in the development of this project included the following:

- The initial alternative was to push all dredge materials into a drainage bottom directly adjacent to the northeast side of the Lake.
- The second was a similar strategy to push all dredge materials into a drainage area to the east of the lake near Mosquito Creek. Both of these alternatives were rejected by the COE, due to both drainage bottoms being classified as fens.
- A third alternative was to increase the outlet height and dam up additional water to increase the lake's water depth. This design would have required the purchase of a permanent water right to mitigate for increased evaporation associated with enlarging the lake's surface area. This design was rejected due to the lack of an available water right and the prohibitive cost of such a purchase.
- The last alternative considered the development of a peninsula in the lake to reduce the amount of dredge material that would need removed from the site. This was intended to reduce dredge material removal costs. However, the construction of a peninsula would ultimately have buried a portion of the lake's emergent vegetation. This design was rejected by the COE and EPA as being too difficult to mitigate at the project's high elevation location.

The proposed project is limited in several respects. Regulatory limitations include:

- Colorado Division of Water Recourses - Substitute water supply plan
- Corp of Engineers – 404 permit
- Environmental Protection Agency
- Colorado Department of Public Health and Environment – 401 Water Quality Certification

Environmental concerns:

- Viable location for disposal of dredge materials.
- Equipment impact on the environment.
- Water quality concerns.
- Timelines driven by water availability.
- Wildlife.

Social concerns:

- Water rights issues associated with refilling the lake.
- Construction of a parking area.
- Species of trout to be stocked.

- Management prescription conflicts.
- Low value, low risk road assessment.
- Continental Divide Trail viewshed.

The preferred alternative is believed to be the best alternative to meet budget constraints, water right regulations governing the water needed to refill the lake, regulatory requirements of all agencies and provide for the development of a parking area near the lake.

Table 1: Comparison of alternatives

Alternative	Meets Budget Limitations	Meets regulatory requirements	Provides parking area	Possesses required water rights	Meets environmental requirements
A	Yes	Yes	No	No	Yes
B	Yes	Yes	No	Yes	Yes
C	Yes	Yes	Yes	Yes	Yes

2.5 Preferred alternative: Alternative C has been chosen as the preferred alternative for the Mosquito Lake Restoration Project.

2.6 Design Criteria:

Table 2: Project Design Criteria Comparison

PROJECT DESIGN CRITERIA			
Alternatives	A	B	C
Trees removed by Forest Service personnel will follow established guides for felling and skidding log and pole size material to reduce damage to residual stand and soil. Felling: In order to restrict residual stand damage, trees shall be felled, as safety permits, to angle in the direction of skidding. Skidding: Logs shall be skidded with the leading end free of the ground.		x	x
Tree boles will be cut-up and donated to the County of Saguache for citizens in need of firewood.		x	x
Estimated volume (cords) of firewood from cut-up tree boles donated to the County will be tracked for reporting purposes.		x	x
Slash and tree tops will be placed around the deposit site perimeter, to help contain dredge materials.		x	x
The contractor will provide matting underneath pump intake to minimize sediment discharge down Mosquito Creek.		x	x
The collection pit will be located within the western edge of the dredge area.		x	x
Matting or some other equally effective protection measure will be required to protect vegetation along the lake's edge from equipment crossing.		x	x
The 2-track hardened crossing will consist of geo-textile material covered with crushed rock to prevent soils from being washed into the wetland.		x	x
Shorelines will require a 3-1 slope to prevent sloughing and a 2 ft. buffer between emergent vegetation and slope.		x	x
Dredge materials will be trucked to the deposit site.		x	x
All equipment used in the project area will be washed and free of noxious plant seed prior to entering the project area.		x	x
Contractors will be required to certify that their equipment has been cleaned prior to entering the project area.		x	x

A site specific noxious plant inventory will be conducted annually for 5 years post disturbance and documented using the noxious weed risk assessment form.		x	x
Improve the existing trail system around the lake.		x	x
Dredge material will be contoured and seeded for natural appearance.		x	x
Borrow area will be sloped and seeded.			x
Corp of Engineer requirements for 404 permit:			
A Forest Service biologist shall be on site at all times during construction of the project.		x	x
Heavy equipment mats shall be placed within the lake fringe to protect wetland and riparian plants and soils from compaction. All heavy equipment entering or leaving the lake shall traverse only where mats are in place. The mats shall extend for a minimum distance of fifteen feet in length and at a width necessary to accommodate the widest vehicle to be used.		x	x
All riparian and emergent marsh areas disturbed by construction activities shall be restored to the original topography and vegetative community.		x	x
All work at the lake outlet shall be performed by hand only, including bringing in materials by wheel barrow or similar equipment.		x	x
No excavation shall be allowed within any vegetated areas or within 15 feet of the lake outlet.		x	x
The pump hose outlet into Mosquito Creek shall be monitored at all times for sediment loading and/or scouring within the Creek. If sedimentation and/or scouring are detected, pumping shall cease until corrective measures are taken.		x	x

Chapter 3: Affected Environment and Environmental Consequences

3.1 Chapter introduction: Chapter 3 is organized by resource, discusses baseline conditions and then analyses impacts of each alternative.

- 3.1.2. Mosquito Lake, which was once a viable trout fishery has been losing water depth for many years. Water depths are currently insufficient to support fish and continue to decline due to down-cutting of the lake's outlet. Without intervention the lake could potentially drain completely in the next few decades. The lake is currently surrounded with 2-4 ft. of emergent vegetation. In addition, the western end of the lake has a section of submergent vegetation approximately 20 feet wide. Emergent shoreline vegetation provides valuable habitat and aesthetic qualities to Mosquito Lake. The remainder of the lake bottom is free of vegetation. Historically, the lakes was reported to have had many willows surrounding the lake, but are believed to have disappeared during the last period of beaver occupancy. Several small seedling willows currently exist along the shoreline, of which most are less than 1 foot in height. Only natural processes appear to have impacted the lake's condition at this point, which has included past beaver activity.

A suitable deposit location for the projects 7500 yards of dredge material has been critical in the development of this project. The selected deposit site is an upland location off the end of FS Road 862.2D. It is estimated that approximately 200 Engelmann spruce trees will need to be removed to provide for dredge material placement and equipment access to the lake, of which 33 are > 8" in diameter. Access from FS Road 862.2D to the lake's edge consists of an existing "2-track" approximately 100yds. in length (See Figure 3). It is currently unsuitable for

passage of heavy equipment and will require excavation and tree removals. The 2-track also crosses a small drainage, at its low point, which flows into a wetland on the lake's southeast corner. This drainage is ephemeral and generally dry except during spring snow melt.

Mosquito Lake is spring fed from Sheep Mountain. Water quality is currently high with excellent water clarity and an abundance of aquatic invertebrate life. Current water depths are 3-4 ft. with slight seasonal changes depending on flow conditions. The lake is also the headwater for Mosquito Creek, which ultimately flows into Kerber Creek.

Figure 3. 2-Track off FS Road 862.2D



3.2 Wildlife Resources:

- 3.2.1 **Alternative A**, or the no action alternative on wildlife, is not without consequences. While no project activities or disturbance will occur at or around the lake, its outlet will likely continue downcutting. This is expected to eventually, over the next several decades, to drain the lake and create in its place a wet meadow or simply a stream channel. Alternative A will not provide for future fish habitat and will likely provide little to no lake habitat for wildlife in the distant future.

Direct or indirect Effects: No direct effects are expected as a result of Alternative A.

Indirect effects include the expected eventual loss of Mosquito Lake to its natural progression to a wetland or stream channel.

Cumulative Effects: No cumulative effects are expected as a result of Alternative A.

- 3.2.2 **Alternative B**, or the proposed alternative, is expected to increase lake depths to a point where it can once again support trout. The selected dredge material placement site will require the removal of several mature spruce trees and many seedlings. These trees represent potential suitable habitat for Canada lynx and several other wildlife sensitive species. Project activities are not expected to result in the loss of any wildlife individuals, but would result in the permanent loss of approximately 300 sq. ft. of wildlife habitat within the 2-track area. The ½ acre deposit site is expected to take up to 50 years to reestablish mature spruce trees. The installation of a gate across the end of FS Road 862.2D, following project activities will prevent unauthorized vehicular access to the lake. All potentially affected TES species determinations have been summarized in tables 3 and 4 below.

Breaching of the lake's seal or water holding capacity due to dredging operations could be a setback to project objectives. Core samples and soil maps indicate approximately 8 ft. of clay to clay loam material with gravel in the soil profile beneath Mosquito Lake. Depth objectives for the project require the removal of 5 ft. of existing sediments. However, there exists the potential for a breach to occur. In the advent of a leak, sufficient dredge material will be restored to the damaged area to reseal the lake bottom.

Precautions have been established within the project's design criteria to preserve water quality, prevent the downstream transport of unacceptable amounts of sediments and minimize shoreline vegetation alteration. Based on design criteria, water quality is expected to return to normal within 2 weeks of the project's completion and shoreline vegetation, at the crossing location, restored by the end of the growing season.

Therefore, impacts due to the proposed project are considered mitigated for all wildlife species identified as potentially occupying the project area. An in-depth examination of each species analyzed can be found in the BABE.

Direct or indirect Effects:

Direct effects include the restoration of suitable trout habitat to Mosquito Lake. Additional effects are the permanent loss of approximately 300 cubic feet of spruce habitat along the existing 2-track and the temporary loss of an additional ½ acre of spruce habitat at the sediment deposit site.

Indirect effects include increased visitor use of the Mosquito Lake area for recreational fishing under Alternative B.

Cumulative Effects:

Cumulative effects include increased traffic on FS Road 862.2D as a result of increased recreational visits by the public under Alternative B.

- 3.2.3 **Alternative C**, or the preferred alternative, is essentially the same as alternative B, with the additional construction of a parking area over the deposit site and the excavation of borrow material from the uphill side of FS Road 862.2D. The borrow site is expected to provide surface materials for the parking area. The construction of a parking area is also expected to result in the permanent loss of < ½ acre of wildlife habitat and some additional temporary loss of habitat from the borrow area. Total habitat losses as a result of project activities will be < 1 acre in size. Therefore, impacts are considered insignificant for all wildlife species identified as potentially occupying the project area. An in-depth examination of each species analyzed can be found in the BABE.

Direct or indirect Effects:

Direct effects include the restoration of suitable trout habitat to Mosquito Lake. Additional effects include the permanent loss of approximately 300 cubic feet of spruce habitat along the existing 2-track and borrow area. Approximately an additional ½ acre of spruce habitat will also be permanently lost at the sediment deposit site to the construction of a public parking area. Indirect effects include increased visitor use of the Mosquito Lake area for recreational fishing.

Cumulative Effects:

Cumulative effects include increased traffic on FS Road 862.2D as a result of increased recreational visits by the public and additional habitat loss from the proposed parking area added to the existing road under Alternative C.

3.2.4 Determination Summary:

Table 3: Determination and Mitigation Summary for R2 Sensitive Species

Species List	Determination	Rationale	Mitigation
Canada lynx (T) <i>Lynx canadensis</i>	NLAA	Suitable habitat	Yes
Mexican spotted owl (T) <i>Strix occidentalis lucida</i>	NE	No suitable habitat	No
Southwestern willow flycatcher (E) <i>Empidonax trailii extimus</i>	NE	No suitable habitat	No
Uncompahgre fritillary butterfly (E) <i>Boloria acrocneuma</i>	NE	No suitable habitat	No

NE - No Effect

NLAA - May Effect, Not Likely to Adversely Affect (consultation required - use long form)

LAA - May Effect, Likely to Adversely Affect (consultation required - use long form)

Table 4: Determination and Mitigation Summary for R2 Sensitive Species

Species List	Determination	Rationale	Mitigation
INSECTS			
Great Basin silverspot butterfly <i>Speyeria nokomis nokomis</i>	NI	No suitable habitat	No
AMPHIBIANS/FISH			
Boreal toad <i>Bufo boreas boreas</i>	NI	No occupancy	No
Northern leopard frog <i>Rana pipiens</i>	NI	No suitable habitat	No
Rio Grande cutthroat trout (FC) <i>Oncorhynchus clarkii virginalis</i>	NI	No occupancy	No
Rio Grande chub <i>Gila pandora</i>	NI	No suitable habitat	No
Rio Grande sucker <i>Catostomus plebeus</i>	NI	No suitable habitat	No
BIRDS			
American peregrine falcon <i>Falco peregrinus anatum</i>	NI	No suitable habitat	No
Black swift <i>Cypseloides niger</i>	NI	No suitable habitat	No
Boreal owl <i>Aegolius funereus</i>	MI	Suitable habitat	Yes
Brewer's sparrow <i>Spizella breweri</i>	NI	No suitable habitat	No
Burrowing owl <i>Athene cunicularia</i>	NI	No suitable habitat	No
Ferruginous hawk <i>Buteo regalis</i>	NI	No suitable habitat	No
Flammulated owl <i>Otus flammeolus</i>	NI	No suitable habitat	No
Gunnison sage-grouse (FC) <i>Centrocercus minimus</i>	NI	No suitable habitat	No
Lewis's woodpecker <i>Melanerpes lewis</i>	NI	No suitable habitat	No
Loggerhead shrike <i>Lanius ludovicianus</i>	NI	No suitable habitat	No
Northern goshawk <i>Accipiter gentiles</i>	NI	Species not present	No
Northern harrier <i>Circus cyaneus</i>	NI	No suitable habitat	No
Olive-sided flycatcher <i>Contopus borealis</i>	MI	Suitable habitat	Yes
Sage sparrow <i>Amphispiza belli</i>	NI	No suitable habitat	No
Yellow-billed cuckoo (FC) <i>Coccyzus americanus</i>	NI	No suitable habitat	No
White-tailed ptarmigan <i>Lagopus leucurus</i>	NI	No suitable habitat	No
MAMMALS			
American marten <i>Martes Americana</i>	MI	Suitable habitat	Yes
Fringed myotis <i>Myotis thysanodes</i>	NI	No suitable habitat	No

Gunnison's prairie dog (FC) <i>Cynomys gunnisoni</i>	NI	No suitable habitat	No
Hoary Bat <i>Lasiurus cinereus</i>	MI	Suitable habitat	Yes
New Mexico meadow jumping mouse (FC) <i>Zapus hudsonius luteus</i> Conejos Peak District only	NI	No suitable habitat	No
North American Wolverine (FC) <i>Gulo gulo luscus</i>	MI	Suitable habitat	Yes
River Otter <i>Lontra canadensis</i>	NI	No suitable habitat	No
Rocky Mountain Bighorn Sheep <i>Ovis canadensis canadensis</i>	NI	No suitable habitat	No
Townsend's big-eared bat <i>Corynorhinus townsendii townsendii</i>	NI	No suitable habitat	No

NI – No Impact

MI - May Impact (May Impact Individuals, but is not likely to cause a trend towards Federal listing or result in loss of viability in the planning area)

BI - Beneficial Impact

LI - Likely Impact (Likely to result in a trend towards federal listing or loss of viability in the planning area) – use long form

3.2.5 Mitigation Measures:

1) Report any boreal toad, goshawk, or American marten sightings in the project area, to the District biologist as soon as possible. Based on the type of sighting reported, the addition of an appropriate conservation measure, if needed, will then be determined.

3.2.6 Management Indicator species:

The Revised Forest Plan, as amended, lists 9 species as MIS on the Forest (Table 4). All MIS were evaluated as to whether the species or their habitat was present and to what extent project activities may affect the species or their habitats, if present.

Table 5: RGNF MIS Species

Species	Habitat type/acres at Forest level	Habitat present	Project affect habitat	Acres affected	Percent habitat affected at Forest level
		Yes/No	Yes/No		
Lincoln's Sparrow <i>Melospiza lincolni</i>	Willow riparian (11,680 acres)	No	No	None	None
Wilson's Warbler <i>Wilsonia pusilla</i>	Willow riparian (11,680 acres)	No	No	None	None
Pygmy Nuthatch <i>Sitta pygmaea</i>	Ponderosa pine (38,000 acres)	No	No	None	None
Brown Creeper <i>Certhia americana</i>	Mature spruce-fir/mixed conifer (634,000 acres)	Yes	Yes	< 1.0 ac.	Insignificant
Hermit Thrush <i>Catharus guttatus</i>	Mature spruce-fir/mixed conifer (634,000 acres)	Yes	Yes	< 1.0 ac.	Insignificant
Vesper Sparrow	Grasslands and montane shrublands	No	No	None	None

<i>Poecetes gramineus</i>	(222,000 acres)				
Rio Grande Cutthroat Trout <i>Oncorhynchus clarkii virginalis</i>	Aquatic systems (1,050 stream miles and 1,200 lake acres)	No	Yes	Restore 2 ac. of lake habitat.	Beneficial effect
Elk <i>Cervus elaphus</i>	All LTAs on the Forest	Yes	Yes	< 1.0 ac.	Insignificant
Mule Deer <i>Odocoileus hemionus hemionus</i>	All LTAs on the Forest	Yes	Yes	< 1.0 ac.	Insignificant

The Mosquito lake Restoration Project is not expected to have a significant impact on any Forest MIS. Project activities will result in the removal of approximately 200 spruce trees directly adjacent to FS Road 862.2D and along the 2-track into the lake. The negative impact of these tree removals in comparison to the number of available trees in the area and across the Forest is not measurable. As for the dredging of Mosquito Lake, project activities are expected to provide suitable habitat conditions for trout that have not existed since the 1970's.

The scale and extent of this project is such that it would not have a discernible effect on any of the Forest's MIS population trends. Rather, it is the cumulative effects of multiple projects that are expected to impact the quality and quantity of MIS habitats, their spatial distribution over the Forest, and consequently population trends. Accordingly, Forest level monitoring is deemed to be more appropriate for the scale, extent and timing of the effects of the proposed activities.

3.2.7 Migratory Birds:

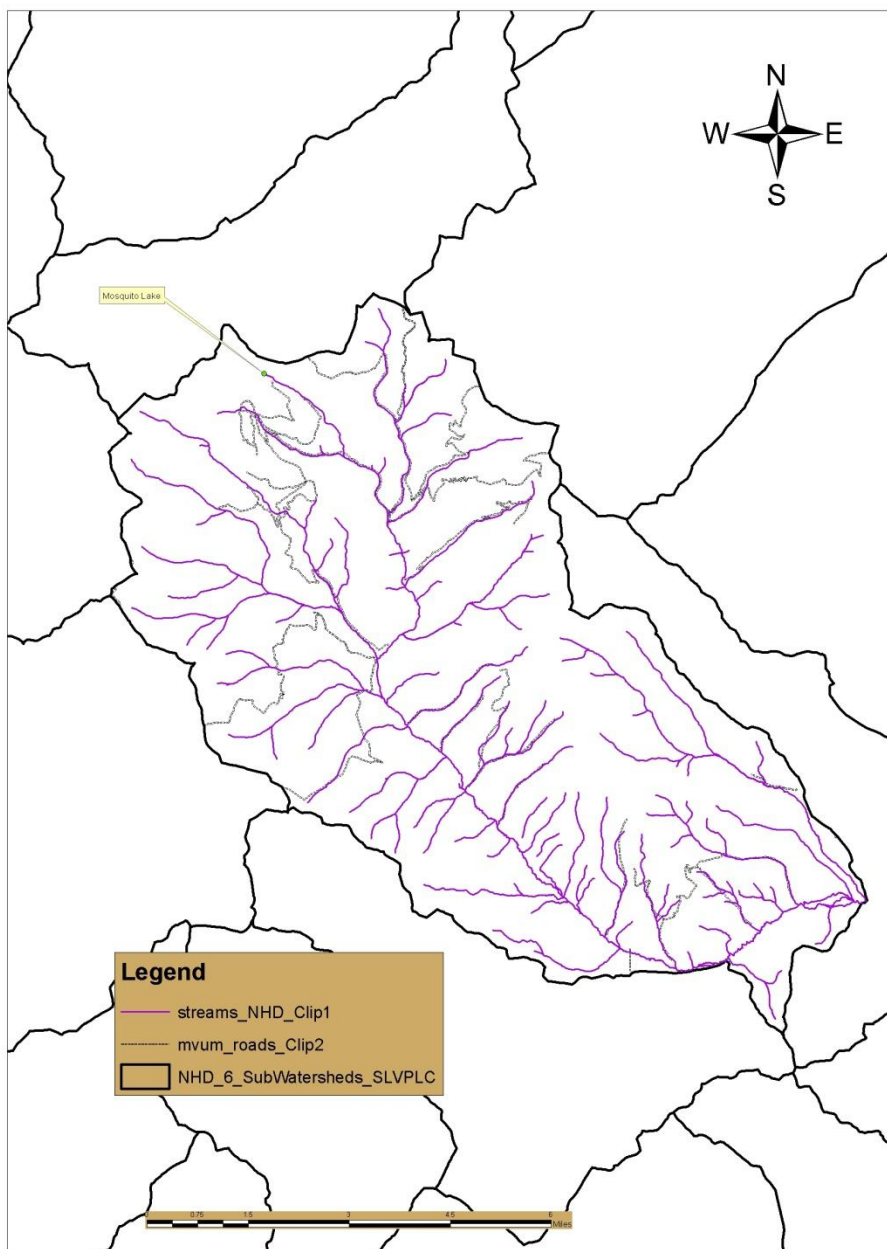
There are no negative effects anticipated on any FWS Birds of Conservation Concern as a result of the proposed project. There are also potentially five Colorado Landbird Conservation Plan species with habitat within the proposed project area. However, no known occupancy is occurring at this time and project effects would be considered insignificant if occupancy did occur. For further information see Migratory bird Report in Appendix C.

3.3 Hydrology:

3.3.1 Scope of the analysis: Mosquito Lake is a natural lake formed by a natural dike. Over time the lake has been filling in due to natural sedimentary processes. As a result, it can no longer support a recreational fish population. There is a lack of recreational fishing opportunities on the Saguache district, and this project proposes to provide an additional opportunity to the public.

Figure 4: Cottonwood Creek - Kerber Creek Watershed (HUC # 130100030201) showing watershed boundaries, roads, NHD streams, and location of Mosquito Lake.

Cottonwood Creek - Kerber Creek HUC - 130100030102



This watershed consists of 39,851 acres. Mosquito Lake is located in the northern (uphill) portion of the watershed. Annual precipitation ranges in the watershed from 10-12 inches annually in the lower part of the watershed to 28- 32 inches annually in the upper part. Mosquito Lake averages 24 - 28 inches annually. Snowmelt, during the spring and early summer, is the main source of rise and fall of the hydrograph. During the rest of the seasons, stream flow comes from seepage and groundwater discharge as baseflow.

- 3.3.2 **Alternative A – No Action Alternative:** No effects would occur under alternative A. No changes would be made to the current depth of the lake. No actions would be taken to make improvements for a recreational fishery. The baseline stream flow will not change. Over time natural processes will occur. The outlet may continue to erode and down cut causing erosion and sediment will be carried in the creek. This action can drain the lake, if the down cutting is significant. This event will cause the stream to equilibrate at a different elevation and some additional erosion will occur. Another natural process that will occur over time is the transition of the lake to a meadow. As sediments continue to be deposited in the lake bed, grasses will grow until eventually only a creek flows through the grass meadow.
- 3.3.3 **Alternative B – Proposed Alternative:** Under the Proposed Alternative Mosquito lake will be dredged to create a deeper lake which will support a recreational fish population. Pumps will be used to drain the lake and keep it drained during the dredging process. The outlet of the pump will be placed in the current stream channel and pumping rates will be regulated to minimize erosion in the existing channel. During the dredging process pumps will be used to keep water out of the lake to allow dredging to occur. Dredging will be performed using heavy equipment to remove and haul away dredge materials. Following the dredging, the lake will be allowed to refill to capacity under a Division of Water Resources Substitute Water Supply Plan, Pursuant to C.R.S. 37-92-308(5). Upon recharge the system will return to its previous stream flow condition.

During the pumping and dredging process it is anticipated that some sediment will be introduced to the creek but, matting will be used to minimize this possible addition of sediment to the stream. As the project is only anticipated to require about a week to complete the sediment delivery should be small for only a short amount of time. Increased stream flows during draining also have the potential to increase erosion in the stream channel, but are not expected to exceed normal spring runoff flows.

An access road will be provided by the development of an old two track, which will be improved to allow dump trucks to haul the dredge material from the lake to the dump site. The two track crosses an ephemeral drainage, which helps feed a small wetland to the south of the lake. Best Management Practices (BMPs) will help protect the wetland from potential sediments until the hardened crossing is completed.

The dump area at the end of FSR 862.2D will require that a number of trees be cut. Tree slash will be used as a sediment trap to contain wet dredge material upon dumping. Tree slash is also expected to prevent sediments due to rain events and snow melt from reaching Mosquito Creek. The following year the dredge material will be rehabilitated with additional top soil and seeding.

A gate will be placed at the end of the current road to prevent public access by

vehicle to the lake. The road would be open to CPW staff for stocking purposes and forest administrative use.

It is anticipated that activities will have no long-term effects on the hydrology of the system. Any effects are expected to be short-termed and minor in magnitude. Stream flows will fluctuate during the course of the project, but at the conclusion the lake will be filled and the stream flows will return to existing conditions.

- 3.3.4 **Alternative C – Preferred Alternative:** This alternative is the same project as Alternative B with the exception of the parking area. This alternative proposes to use the dredge material, as well as some material from the cut bank in the current road, to construct a parking area. After the dredge material has a chance to dry, material would be taken from the cut bank to cover the dredge material and make the site suitable for a parking area. This additional disturbance presents another possibility of sediment being introduced to the stream systems. This risk is minimal, as prevention measures are in place to prevent erosion from dredge and cut materials from reaching Mosquito Creek. In addition, the new cut bank would be sloped, seeded and if needed, wattles installed to prevent erosion.

As in Alternative B, alternative C is not anticipated to have any significant short-term effects and long-term effects are negligible.

Indirect Effects: Indirect effects of this project are few. Other downstream water users will not be directly affected due to the implementation of the Substitute Water Supply Plan. The current owners of the water needed to refill the lake will not be able to use a portion of their water for irrigation purposes this year, but will return to them next year. Increased traffic on the road may increase sediment delivery to the stream. As visitor use of Mosquito lake increases, water quality issues associated with recreation may increase. The wetlands located around the lake may also be at higher risk of damage due to increase public use.

These indirect effects are limited and are not expected to have a significant impact on the surrounding environs of the lake. With proper maintenance and repair of the road, risks of sediment loading to streams is greatly reduced.

Cumulative Effects: Alternative C will not change the disturbance percentage on a watershed basis at all. The percent of cumulative watershed disturbance will be largely unchanged as the footprint of the lake on the landscape will be unchanged. Watershed, and stream health will remain constant, while lake health may appear to be reduced, as it will take a few years to fully recover from the dredging process. Over the next two years lake health is expected to improve to existing or better conditions.

3.4 Recreation Resources:

3.4.1 Scope of the Analysis:

This analysis focuses on the proposed Mosquito Lake Dredging Project and its effects on recreational activities.

- 3.4.2 **Alternative A – No Action Alternative:** The No Action Alternative would mean an absence of intervention into the declining water level of Mosquito Lake. Restoration of any recreational fishing or road improvements at the end of FS road 862.2D would not occur. No ground disturbing activities would occur under this alternative.

Direct, Indirect, and Cumulative Effects: Alternative A would have no direct, indirect, or cumulative effect on existing recreational opportunities. Current recreational use is estimated at 104 visitors per year.

- 3.4.3 **Alternative B – Proposed Action:** The Proposed Alternative is to restore Mosquito Lake as a recreational fishery and move dredge materials to the end of FSR 862.2D.

Direct Effect: The construction process would temporarily close the area to visitor use for approximately two weeks.

Indirect Effect: Temporarily reduce the visual/esthetic value of the area due to the restoration process. Restore year-round fishing opportunities and provide the only passenger vehicle accessible lake on the Saguache Ranger District. Increase site usage to 312 visitors per year.

Cumulative Effect: This action would have no cumulative effects.

- 3.4.4 **Alternative C – Preferred Alternative:** The Preferred Alternative is to restore Mosquito Lake as a recreational fishery and construct a public parking area.

Direct Effect: The construction process would temporarily close the area to visitor use for approximately two weeks.

Indirect Effect: Temporarily reduce the visual/esthetic value of the area due to the restoration process. Restore year-round fishing opportunities and provide the only passenger vehicle accessible lake on the Saguache Ranger District. Provide sufficient vehicle and trailer parking. Increase site usage to 416 visitors per year.

Cumulative Effect: This action would have no cumulative effects.

- 3.4.6 Design Criteria: Improve the existing trail system around the lake to minimize future resource damage as a result of increased visitor usage.

Trail improvements will consist of clearing wood and rocks away from trail and will be accomplished by FS Recreation personnel.

3.5 Timber Resources:

- 3.5.1 Scope of the Analysis: This analysis focuses on the proposed Mosquito Lake Dredging Project located within Common Vegetation Unit (CVU) SL0201 72. This stand is within Rio Grande National Forest Revised Land and Resource Management Plan, 1996 Management Area Prescription 5.13 Forest Products. The intent of this management area prescription is to allow a full range of activities, with an emphasis on the production of commercial wood products.
- 3.5.2 Past Present and Foreseeable Future Activities: This stand and those adjacent have had past timber harvest activities. The most recent being the Kerber-Antero Timber Sale, which removed approximately 1665 MBF of Lodgepole pine and other conifer species and was completed in 1983.

There is a reasonable chance that stands surrounding Mosquito Lake will soon be infested with mountain pine beetle or spruce beetle or both given the makeup of these stands and the current infestation of spruce beetle on the Rio Grande NF and mountain pine beetle in lodgepole pine throughout the Rocky Mountain Region. Common stand exam data was collected in timber stands south and east of the project area in 2008. This data may be used to develop silvicultural diagnosis and preparation of an economic feasibility analysis and environmental assessment to analyze the impacts of timber harvest within the next 3 to 5 years.

- 3.5.3 Existing Condition: This stand is approximately 44 acres in size. Local vegetation type is Spruce/Fir and dominant life form is PIEN: ABLA. This stand is located at 10,749 feet elevation with a north east aspect and slope of 28%. Ninety percent of the stand is tree covered with 5% in forbs and 4% in grasses.
- 3.5.4 Direct, Indirect and Cumulative Effects

Alternative A - No Action Alternative: The No Action alternative would have no effect on the timber resource.

Alternative B – Proposed Alternative: The Proposed Alternative would impact approximately 200 seedling, sapling and sawtimber size trees that will be cut and removed to accommodate the dredge material deposit site, borrow removal site and access to the lake. A total of approximately ½ acre of viable trees will be temporarily lost from forest productivity.

Alternative C – Preferred Alternative: The Preferred Alternative would have similar impacts to Alternative B, with the exception of the dredge material site and lake access will result in a permanent loss from forest productivity.

3.6 Archeology Resources:

- 3.6.1 No archeology resources were found within the proposed project site. Therefore, none of the proposed project alternatives are expected to have any direct, indirect or cumulative effect on archeology resources.

3.7 Soils:

- 3.7.1 Scope of the Analysis: In the spring of 2011, Forest Service resource specialists visited Mosquito Lake to do a preliminary assessment of the area's hydrology, wetlands, the lake's potential for dredging and consistency of sediments.

The soil inventory of the area includes SRI (soil resource inventory) units of 129, 142, 150 and 162. These units appear to be the units directly connected to mosquito lake system. Units 142 and 150 border the lake itself and 129 and 162 are the source of the stream which feeds the lake. The following table depicts the SRI units, their components and a brief description of the soil.

Table 6: SRI (soil resource inventory) units connected with Mosquito Lake. The components in italics are miscellaneous areas, which in this case are rocks.

SRI Units	Components	Soil Description
129	Cryumbrepts <i>Rock Outcrops</i> <i>Rubble Land</i>	Shallow to very shallow soil derived from volcanic rocks
142	Frisco Scout	Deep well drained soils derived from volcanic parent materials Deep well drained soils derived from volcanic parent materials
150	Leighcan Frico	Deep well drained soils derived from volcanic parent materials Deep well drained soils derived from volcanic parent materials
162	<i>Rock outcrop</i> <i>Rubble Land</i>	

These soils do not have a considerable risk of erosion or mass movement. The geology of the area is listed as Tial (Fine grained and intermediate grained andesite and breccias). Some volcanic soils have the potential for high levels of clay content, which is derived from fine and intermediate grained volcanic parent materials as they break down. Over time, through natural processes, the lake has filled with sediment derived from these fine and intermediate grained volcanic rocks.

Mosquito Lake is a natural lake which appears to be formed by a natural dike, possibly a moraine, which collected the water and over the years has allowed sediment to accumulate into a deep layer of fine sediment.

In the spring of 2011, a bucket auger was used to investigate the composition of the lake bed sediments. Auger samples were taken ~ 20 ft. from the shore in about 2.5 ft. of water. The samples were taken down to about 2.5 ft. Sediment

samples were gravelly to very gravelly (15 to 59% gravel), with clay loam to clay textures (35 to ~ 50% clay, average more to the 50% side).

- 3.7.2 **Alternative A - No Action Alternative:** No effects would occur. No changes would be made to the current depth of the lake. No actions would be taken to make improvements for a recreational fishery. Over time, natural processes will occur. The outlet may continue to erode and down-cut, causing erosion and sediments to be carried in the creek. This action can drain the lake if the down cutting is significant. This will eventually cause the stream to equilibrate at a different elevation and some additional erosion will occur. Another natural process that will occur over time is the transition of the lake to a meadow. As sediments continue to be deposited in the lake bed, grasses will grow until eventually only a creek will flow through the newly formed meadow.
- 3.7.3 **Alternative B – Proposed Alternative:** The effect to soils will be minimal for this project, outside of Mosquito Lake itself. Sediments throughout the lake bed are layered and without extensive sampling to depth, it is impossible to determine the exact composition and depth of the lake bed sediment. Current knowledge and conditions determine that the likely hood of breaching the seal of the lake is unlikely. If sealing is necessary material removed can be used to reseal the lake.

Two track improvements will cross a intermittent drainage, which flows into a small wetland to the south of the lake. Soil disturbance will occur, as well as compaction. The amount of disturbance will be limited to the immediate corridor of the access road and lake. The major concern here is the effect to the small wetland area. If too much sediment is allowed to filter into this area, the wetland ecology will be irrepreably altered. Necessary preventative actions will need to be instituted to prevent excessive sedimentation. A hardened crossing or culvert will help protect the wetland. In additon, the disturbance caused by traffic will be short-term as the hauling is expected to last only a few days. At the conclusion of project operations, a gate will be placed at the end of FSR 862.2D to prevent public access. While some compaction and displacement is expected along the access corridor, the effects will be limited and short-lived therefore, acceptably small.

The dump area at the end of FSR 862.2D will require that a number of trees will be removed. The major concern here is erosion and sediment loading to the stream. Tree slash will be used as a sediment trap to contain deposited dredge material. Slash is also expected to minimize sediment entering the stream due to rain events and snow melt. The dredge material site will be contoured and seeded to minimize erosion and stabilize dredge materials.

- 3.7.4 **Alternative C – Preferred Alternative:** This alternative is the same project as Alternative B with the additon of a parking area at the end of FSR 862.2D. This alternative proposes to use the dredge material, as well as some borrow material from the cut bank along the road, to surface the parking area.

Soil erosion is increased with exposure of bare soil. Borrow material excavation to surface the new parking area will create additional bare soil, which are susceptible to accelerated erosion. The cut slope will be angled according to BMPs and seeded to help reduce and current and future erosion potential. In addition, parking area surface materials are expected to produce minimal surface erosion and sediment runoff, while edges will be seeded for cover and stabilization.

As in Alternative B, it is not anticipated that Alternative C will have significant short-term or long-term effects.

Indirect Effects: Indirect effects of this project are few. Changes in water flow rates may increase stream bank erosion for a limited amount of time. Increased traffic on the road may increase sediment delivery to the stream. As visitor use of Mosquito lake increases, water quality issues associated with recreation may increase. The wetlands located around the lake may also be at higher risk of damage due to increase public use. An increase of connected drainage problems, especially associated with roads may occur.

These indirect effects are limited and are not expected to have a significant impact on the surrounding environs of the lake. With proper maintenance and repair of the road, risks of sediment loading to streams is greatly reduced.

Cumulative Effects: Soil conditions in the area will remain largely the same. The project is in an area which has seen timber harvest in the past. The small amount of disturbance expected from this project will not directly impact past or future timber cutting units. The cumulative effects will be small due to the majority of the disturbance occurring in the lake bed. As a result the effects will likely be small and short-lived. The exception would be if the lake bed was breached and could not be sealed. This would change many aspects of the soils and hydrology in the area. This is not likely to occur.

3.8 Noxious Plants:

3.8.1 Scope of the Analysis:

Past Actions That Have Affected the Existing Condition: Past ground-disturbing activities typically provide noxious plants an opportunity to establish and spread. Activities such as construction, travel routes, and recreation all disturb the ground. Ultimately, wildlife, livestock, machinery, recreational vehicles, people, wind, and water transport seeds from existing locations to new sites.

Existing Condition: A site inventory of noxious plant species has been completed and is ongoing within the project area. A noxious weed risk assessment form was completed at the time of inspection and is part of the project record. Site investigation indicated that there were no noxious plants witnessed in the project area.

3.8.2 Direct, Indirect, and Cumulative Effects:

None of the proposed alternatives would be expected to result in direct, indirect, or cumulative effects.

Noxious plants are a concern on the RGNF because they aggressively compete with native plants for sunlight, water, nutrients, and space. They have the potential to displace native plants and animals. They can reduce forage for livestock and wildlife, degrade wildlife habitat, and negatively affect recreation opportunities. In extreme situations with certain weeds, there is a corresponding impact to soil health since the noxious plants provide little effective cover and the soil is exposed to rainfall impacts, overland flow, and higher temperatures than would occur in the natural plant community. Many noxious plants are also injurious or poisonous to both wildlife and to humans and domestic animals. The long-term effects of any infestations that could occur or become established within the project area would result in the reduction of species diversity within the native plant community. Therefore, it is necessary that on-going noxious plant inventories continue and treatment of known, existing infested areas both inside and outside of the analysis area continue.

3.9 Scenic Resources:

- 3.9.1 Scope of the Analysis: This area is mapped as a "Moderate" for Scenic Resource Objectives in the Revised Forest Plan for the Mosquito Lake area. "Moderate" means: (Slightly Altered). This refers to landscapes where the valued landscape character appears slightly altered. Noticeable deviations must remain visually subordinate to the overall landscape character being viewed.

Any viewshed of the project area from the Continental Divide Trail must be considered in the development of the project. Because this landscape is also being viewed in the immediate foreground or foreground we should pay close attention to designing for future recreationists.

- 3.9.2 **Alternative A - No Action Alternative:** Alternative A will have no effect on scenic resources.

- 3.9.3 **Alternative B – Proposed Alternative:** The project area is not visible from the Continental Divide Trail and will therefore have no effect on visitor's visual experience. Project activities are expected to create some short-term visual effect

on visitors. However, project design criteria will minimize impacts and speed recovery of disturbed areas.

3.9.4 Alternative C – Preferred Alternative: The project area is not visible from the Continental Divide Trail and will therefore have no effect on visitor's visual experience. The construction of a parking area is expected to result in more long-term visual effects on visitors. This is due primarily to the 2-3 year completion of the project and creation of the parking area. However, project design criteria will minimize impacts and speed recovery of disturbed areas.

3.9.5 Design Criteria: Most visitors will be going to the lake to fish and will want a nearly natural appearing landscape for the recreation experience, given its remote location. Therefore, a reseeding plan or replanting of fill slopes may be in order. During construction, it would help to not just push fill up to the base of trees, it's best to try and contour around them thereby minimizing the altered appearance of the landscape.

For tree removals or fill areas, use the natural contours of the landscape to form your turn-around. When removing timber, remove timber in an irregular pattern or manner that mimics that natural landscape patterns. Be careful not to disturb or damage other trees around the site so that you maintain the integrity of the site.

3.10 Unavoidable adverse impacts: (on all resources)

There are no known unavoidable adverse impacts on all resources, associated with this proposed project.

3.11 Relationship of short-term uses and long-term productivity: (on all resources)

The removal of all the water from Mosquito Lake is not expected to an impact on aquatic vegetation, but may have a greater short-term negative impact on aquatic invertebrates for one season. However, the return of trout to this system is expected to improve long-term productivity and reduce overall mosquito density.

Timber resources in the proposed project area are considered at risk for beetle activity in the near future. Tree removals associated with the proposed project may have a small beneficial impact in relation to expected future beetle activity.

3.12 Irreversible and Irretrievable commitments of Resources: (on all resources)

The project as proposed is not expected to result in any irreversible or irretrievable commitment of resources.

Chapter 4: List of Preparers:

Dwight A. Irwin	USFS Wildlife Biologist (Team lead)
Vaughn Thacker	USFS Soil Scientist
Angie Krall	USFS Archaeologist

Mary Nelson	USFS Supervisory Forester
Dave Hosack	USFS Supervisory Natural Resource Specialist
Lisa VanAmburg	USFS Rangeland Management Specialist
Kelly Ortiz	USFS Landscape Architect

Chapter 5: List of Agencies, Organizations, and Persons to Whom Copies of the Statement Are Sent:

COLORADO PARKS AND WILDLIFE
COLORADO DIVISION OF WATER RESOURCES
COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
SAN LUIS VALLEY TROUT UNLIMITED
FOREST GUARDIANS
COLORADO WILD
COLLEGIATE PEAKS ANGLERS
SAM PACE
MICHAEL SPEARMAN
LINDA JOSEPH
RACO LAND & CATTLE CO LLP
US ARMY CORP OF ENGINEERS
US ENVIRONMENTAL PROTECTION AGENCY
ROBERT WILLSCHAU
BRADEY FARRELL

LEGEND

INTERSTATE HIGHWAYS
STATE HIGHWAYS
COUNTY LINES

SCALE
0 50 100 150 200 MILES

WYOMING
UTAH
ARIZONA
NEW MEXICO
KANSAS
OKLAHOMA
NEBRASKA

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
REGION TWO

==>==

RIO GRANDE NATIONAL FOREST
DRAWINGS FOR PROPOSED
MOSQUITO LAKE DREDGE
SAGUACHE RANGER DISTRICT

FOREST INDEX MAP

NW MERIDIAN

Mosquito Lake PROJECT AREA

747N

S10

R7E

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

PREPARED BY: A. GORDON
REVIEWED BY: A. WILK

RECOMMENDED BY: _____
APPROVED BY: _____

QUALIFIED ENGINEER: _____
PROJECT ENGINEER: _____
DESIGN ENGINEER: _____
ASST. SUPERVISOR: _____

TITLE: _____
DATE: _____
SCALE: _____

Forest
RIO GRANDE N. F.
Project Name
MOSQUITO LAKE
DREDGE

Sheet Title
COVER SHEET
Scale
NO SCALE

Sheet
1 OF 5

DESCRIPTION


COVER SHEET
PROJECT INFORMATION
EXISTING SITE
PROPOSED SITE
DETAILS

INDEX TO SHEETS

SHEET NO.

1
2
3
4
5

PAY ITEMS				
ITEM NO.	ITEM DESCRIPTION	METHOD OF MEASUREMENT	QUAN.	UNIT
017113	MOBILIZATION	L.S.Q.	1	L.S.
311313	CLEARING AND GRUBBING	L.S.Q.	1	L.S.
352023	DREDGING/EXCAVATION	D.Q.	7500	CU. YD.
340113	ROAD RECONDITIONING	L.S.Q.	1	L.S.
354237	OUTLET REINFORCEMENT	L.S.Q.	1	L.S.



U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

RECOMMENDED BY _____

RECOMMENDED BY _____

APPROVED BY _____

Quantity Required _____

Project Designer _____

Industry Manager _____

Project Supervision _____

Name _____

Date _____

Date _____

Date _____

Forest

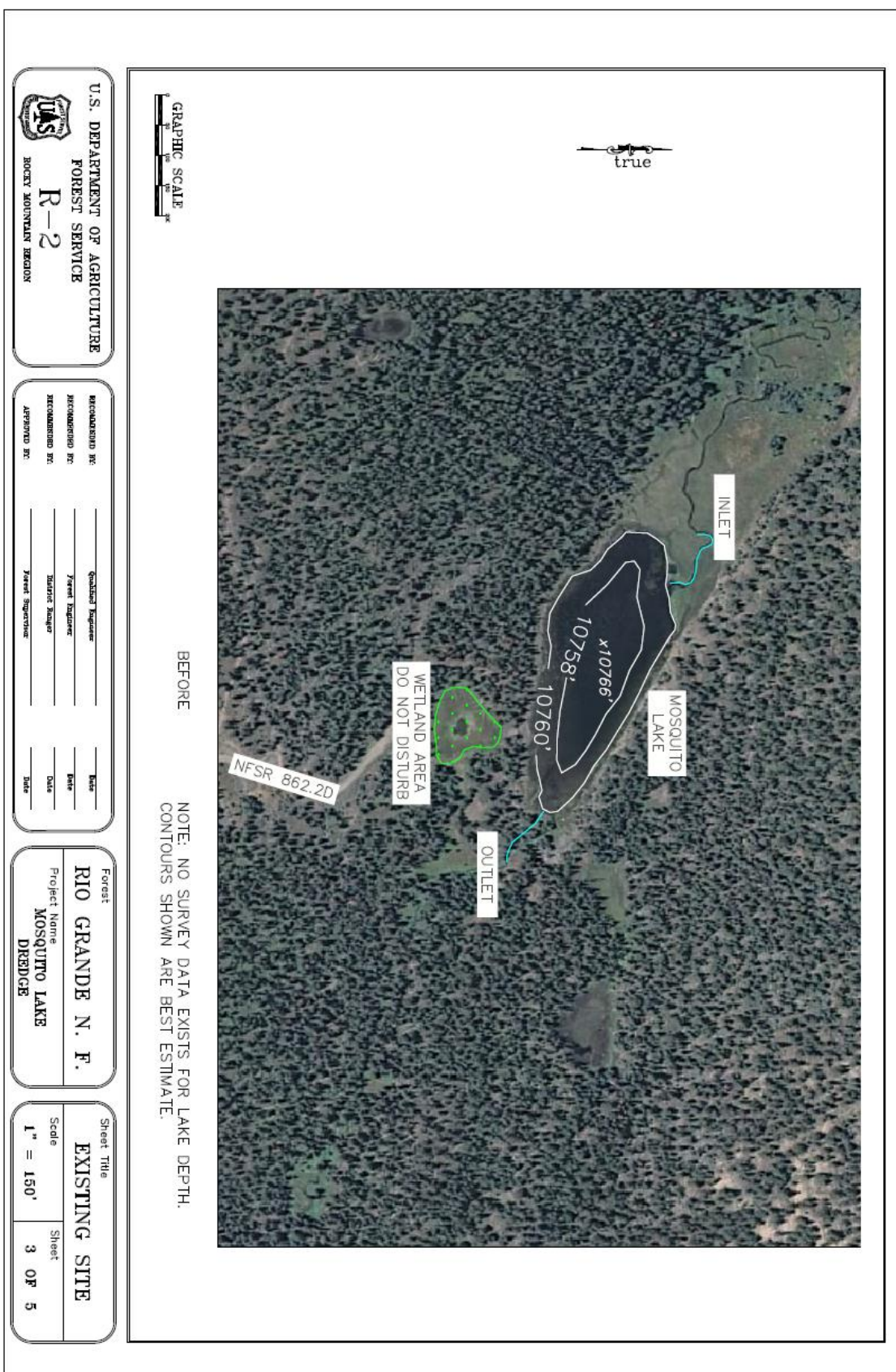
RIO GRANDE N. F.

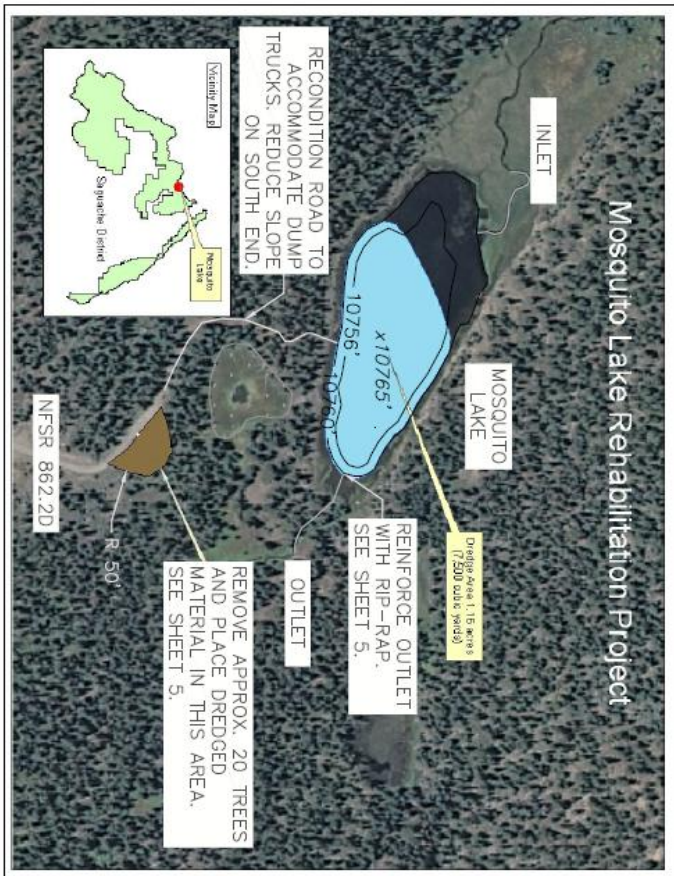
Project Name
MOSQUITO LAKE

DREDGE

Scale
NO SCALE

Sheet
2 OF 5





GRAPHIC SCALE

U. S. DEPARTMENT OF AGRICULTURE



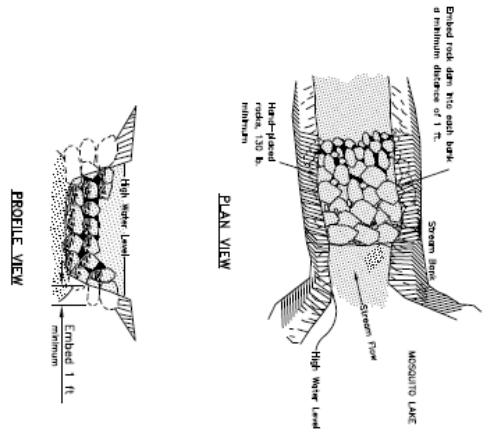
RECOMMENDED BY:	Qualified Engineer	Date:
RECOMMENDED BY:	Project Engineer	Date:
RECOMMENDED BY:	Material Manager	Date:
APPROVED BY:	Project Supervisor	Date:

Forest	Project Name
RIO GRANDE N. F.	MOSQUITO LAKE DREDGE

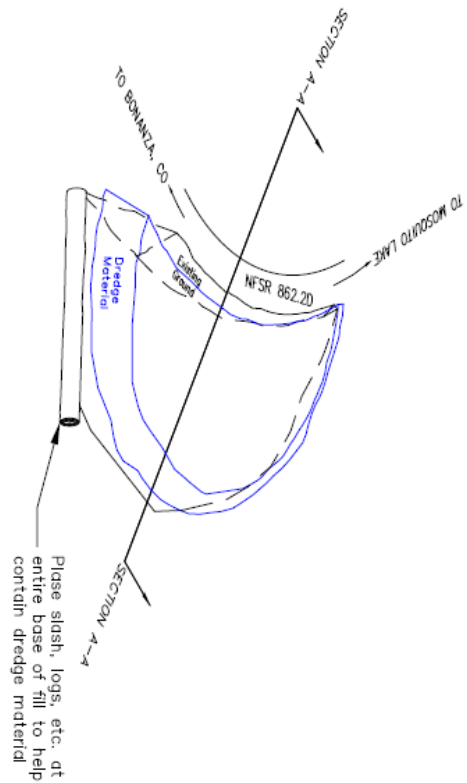
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PROPOSED SITE	
Scale	Sheet
1" = 150'	4 OF 5

OUTLET STREAM ROCK REINFORCEMENT

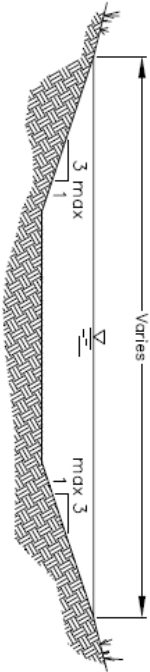
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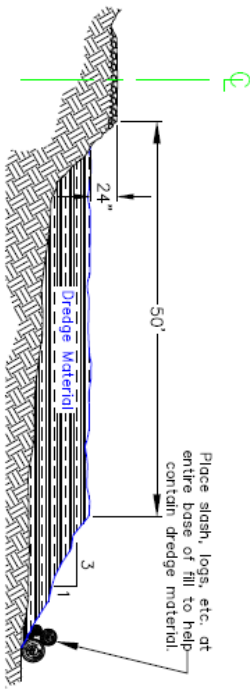
PROPOSED PARKING AREA



PROPOSED TYPICAL LAKE CROSS SECTION



SECTION A-A



U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

RECOMMENDED BY:	QUALIFIED ENGINEER	DATE:
APPROVED BY:	FOREST ENGINEER	DATE:
APPROVED BY:	FOREST MANAGER	DATE:
APPROVED BY:	FOREST SUPERVISOR	DATE:

Forest
RIO GRANDE N. F.
Project Name
MOSQUITO LAKE DREDGE

Sheet Title
DETAILS
Scale
NO SCALE
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5 OF 5

Appendix B: - BA BE MIS Report

BIOLOGICAL ASSESSMENT AND EVALUATION INCLUDING MIS REPORT

Mosquito Lake Restoration Project

Rio Grande National Forest

May 8, 2012

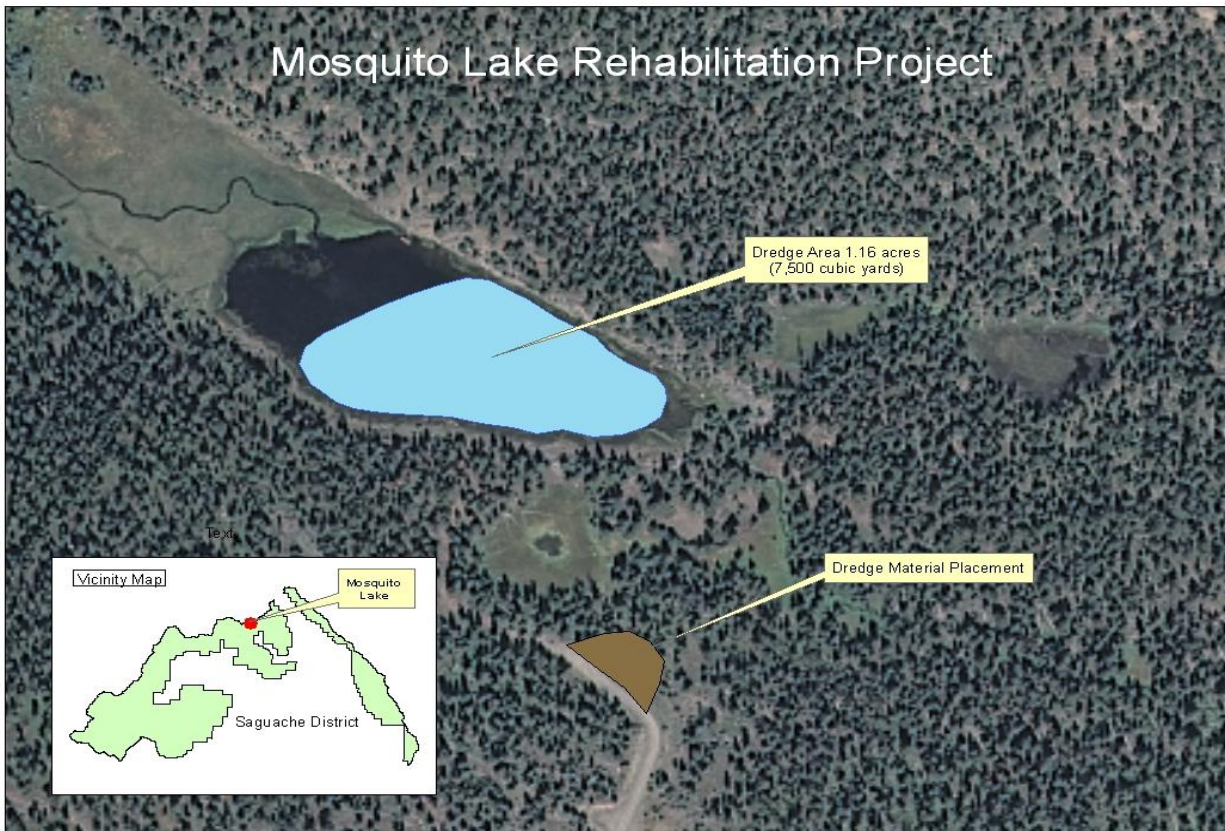
I. Project Description

The Mosquito Lake Restoration Project proposes to dredge approximately 7,500 cubic yards of material from Mosquito Lake to provide sufficient water depth to overwinter fish. Dredge materials will be transported to the end of FS Road 862.2D (Upper Kerber Creek Rd) facilitating the construction of a future parking lot to improve public recreational access at Mosquito Lake. An ATV trail approximately 100 yards in length exists between the end of Upper Kerber Creek Road and Mosquito Lake. This ATV trail will require some excavation and tree removal to accommodate dredging equipment and dump trucks for this project. The dredge material will be deposited directly adjacent to the end of Mosquito Lake Road on the downhill side and will also require the removal of several trees to accommodate material placement. A portion of these trees will be placed around the perimeter of the deposit site to help contain dredge materials. Remaining trees will be removed from the area. Following the completion of dredging activities in 2012, the end of FS Road 862.2D will be gated to prevent vehicle access down the reconstructed ATV trail to the Lake. However, administrative access of a tank truck will continue on an annual basis, primarily for fish stocking purposes.

The lake outlet will be reinforced with hand placed rocks, to prevent further down-cutting of the lake's outlet and further lowering of the lake's water level.

Proposed future actions will include the construction of a parking area at the end of Mosquito Creek Road. Dredge materials will be allowed to dry out before construction of the parking area begins. Dredge materials will then be used to create a foundation for the parking area. Dredge materials will then be covered with borrow material from above the road to harden the parking area surface. This will increase the cut bank area above the road and require the removal of a few additional trees. The parking area is expected to be approximately 50 feet in diameter upon completion in 2013 or 2014 depending on funding.

II. Location/Map



III. Environmental Baseline

Mosquito Lake is a naturally occurring lake that supported trout up until the 1970's and was approximately 5 acres in size. Beaver activity supported its higher water level, which provided suitable fish habitat. In 1980 a logging road was constructed to within approximately 100 yards of the lake. Currently, the beaver are gone and the lake outlet continues to down cut resulting in a continuing lowering of the lake's water level. The lake is approximately 2 acres in size at this time with a depth of 3-4 feet. All lake changes to date have been the result of natural change involving succession to a wetland.

Mosquito Lake



Proposed parking area off FS Road 862.2d requiring the removal of 30-40 trees.



IV. Species List – Threatened and Endangered Species

Those species with no habitat present are evaluated no further in this document. Species include Mexican spotted owl - “no effect”, Southwestern willow flycatcher - “no effect”, and Uncompahgre fritillary butterfly - “no effect”. All species are summarized in the Determination and Conservation Measures Summary Table.

Table 1: Threatened and Endangered Species List and Habitat Description (as concurred with by FWS May 8, 2006).

Species List	Suitable Habitat within Area of Influence/Project Area:	Species documented within or near Area of Influence/Project Area:	Basic Habitat Description
Canada lynx (T) <i>Lynx canadensis</i>	Yes	Yes	Early successional mixed conifer forests and also aspen/willow/shrub-steppe are used for foraging. Late-successional forests are used for denning and winter foraging.
Mexican spotted owl (T) <i>Strix occidentalis lucida</i>	No	No	Steep canyons with a Douglas-fir, white fir, ponderosa pine/pinyon-juniper component.
Southwestern willow flycatcher (E) <i>Empidonax trailii extimus</i>	No	No	Riparian habitats along rivers, streams or other wetlands, where dense growths of willows or other shrub and medium sized trees are present, often with a scattered overstory of cottonwood.
Uncompahgre fritillary butterfly (E) <i>Boloria acrocnema</i>	No	No	Alpine habitat above 11,000 with a snow willow component. Sites are generally found on north, northeast and east aspects.

Table 2: RGNF Sensitive Species (based on the R2 Regional Foresters List, June 10, 2011). Federal Candidate Species = FC

Species	Suitable Habitat w/in Area of Influence/Project Site	Species Documented w/in or near Area of Influence/Project Site	Basic Habitat Description
INSECTS			
Great Basin silverspot butterfly <i>Speyeria nokomis nokomis</i>	No	No	Spring fed and/or subirrigated wetlands at low (7500 feet or less) elevation; larval food plant <i>Viola nephrophylla</i> ; wet meadows interspersed with willows and other woody wetland species; adult nectar sources mostly composites.
AMPHIBIANS/FISH			
Boreal toad (FC) <i>Bufo boreas boreas</i>	Yes	No	Spruce/fir near water and alpine meadows.
Rio Grande cutthroat trout (FC) <i>Oncorhynchus clarkii virginalis</i>	No	No	Streams, rivers and lakes. Most frequently found in headwaters.
Rio Grande chub <i>Gila pandora</i>	No	No	Flowing pools of headwaters, creeks, and small rivers, often near inflow of riffles and in association with cover such as undercut banks and plant debris.
Rio Grande sucker <i>Catostomus plebeus</i>	No	No	Pools, runs, and riffles of small to moderately large streams; usually over gravel and/or cobble.
Northern leopard frog <i>Rana pipiens</i>	No	No	Riparian and wetland areas.
BIRDS			
Bald eagle <i>Haliaeetus leucocephalus</i>	No	No	Nests and roosts are usually found in large open-branched trees near larger lakes, streams, rivers and reservoirs.
Black swift <i>Cypseloides niger</i>	No	No	Nests behind or next to waterfalls and wet cliffs. Forages over forests and open areas.
Boreal owl <i>Aegolius funereus</i>	Yes	No	Mature spruce/fir and mixed conifer forested areas with preference for wet situations (bogs or streams) for foraging
Burrowing owl <i>Athene cunicularia</i>	No	No	Open grasslands associated with prairie dogs. Nests and roosts in burrows dug by mammals or other animals.
Ferruginous hawk <i>Buteo regalis</i>	No	No	Open grasslands and shrub steppe communities. Nests in tall trees or shrubs along streams or on steep slopes
Flammulated owl <i>Otus flammeolus</i>	No	No	Depend on cavities for nesting, open forests for foraging, brush for roosting. Occupy open ponderosa pine or forests with similar features (dry montane conifer or aspen, with dense saplings).
Sage sparrow <i>Amphispiza belli</i>	No	No	Grasslands and open situations with scattered brush and riparian scrub; preferring to feed near woody cover; strongly associated with sagebrush for breeding. Positively correlated with big sagebrush, shrub cover, bare ground, above-average shrub height, and horizontal patchiness; negatively correlated with grass cover.
Brewer's sparrow <i>Spizella breweri</i>	No	No	Strongly associated with sagebrush in areas with scattered shrubs and short grass; to lesser extent in mountain mahogany, rabbit brush, and bunchgrass grasslands with shrubs or large openings in pinyon-juniper.
Northern goshawk <i>Accipiter gentiles</i>	Yes	No	Mature forest generalist. On the Rio Grande, often found in mixed conifer/aspen stands.
Lewis's woodpecker <i>Melanerpes lewis</i>	No	No	Open pine forests, burnt over areas with snags and stumps, riparian and rural cottonwoods, and pinyon-juniper woodlands.
Loggerhead shrike	No	No	Grassy pastures that are well grazed. Nests in

<i>Lanius ludovicianus</i>			shrubs or small trees, preferably thorny such as hawthorn.
Olive-sided flycatcher <i>Contopus cooperi</i>	Yes	No	Mature spruce/fir or Douglas-fir forests with preference for natural clearings, bogs, stream and lake shores with water-killed trees, forest burns and logged areas with standing dead trees.
Northern harrier <i>Circus cyaneus</i>	No	No	Marshes, meadows, grasslands, and cultivated fields. Nests on the ground, commonly near low shrubs, in tall weeds or reeds, sometimes in bog; or on top of low bush above water, or on knoll of dry ground, or on higher shrubby ground near water, or on dry marsh vegetation.
American peregrine falcon <i>Falco peregrinus anatum</i>	No	No	Cliff habitat over 200 feet high with suitable ledges for nest construction.
Yellow-billed cuckoo (FC) <i>Coccyzus americanus</i>	No	No	Open woodland, parks, deciduous riparian woodland; nests in tall cottonwood and willow riparian woodland.
White-tailed ptarmigan <i>Lagopus leucurus</i>	No	No	Alpine tundra, especially in rocky areas with sparse vegetation. Summer habitats include moist, low-growing alpine vegetation. Canopy cover of willow at winter feeding sites preferred.
Gunnison sage-grouse (FC) <i>Centrocercus minimus</i>	No	No	Lek sites are characterized by low vegetation with sparse shrubs often surrounded by big sagebrush dominated plant communities below 9200' elevation. Brood rearing habitat is characterized by riparian vegetation of intermittent and perennial streams, springs, seeps and meadows within upland vegetation communities.
Mountain plover <i>Charadrius montanus</i>	No	No	High plains/short grass prairie habitats, often associated with prairie dog towns. Nesting areas characterized by very short vegetation with significant areas of bare ground.
MAMMALS			
Wolverine (FC) <i>Gulo gulo luscus</i>	Yes	No	Remote subalpine and spruce/fir forested areas. Overall, this species utilizes a wide range of habitat types as it is very mobile.
American marten <i>Martes americana</i>	Yes	No	Spruce/fir and mixed conifer forests with complex physical structure.
Townsend's big-eared bat <i>Corynorhinus townsendii townsendii</i>	No	No	Forages in semi-desert shrublands, pinyon-juniper woodlands and open montane forests. Roosts in caves, mines and mature forests.
Fringed myotis <i>Myotis thysanodes</i>	No	No	Desert, grassland, and woodland habitats. Roosts in caves, mines, rock crevices, buildings, and other protected sites.
Gunnison's prairie dog (FC) <i>Cynomys gunnisoni</i>	No	No	High mountain valleys and plateaus at 1830-3660 m; open or slightly brushy country, scattered junipers and pines. Burrows usually on slopes or in hummocks.
Hoary Bat <i>Lasiurus cinereus</i>	Yes		Primarily a solitary tree-foliage roosting bat; may be associated with any habitat type that contains trees, up to timberline.
New Mexico meadow jumping mouse (FC) <i>Zapus hudsonius luteus</i> Conejos Peak District only	No	No	Primarily associated with tall grass and sedge component in riparian areas along perennial streams; elevation limit suspected to be about 9000 feet locally.
River Otter <i>Lontra canadensis</i>	No	No	Major river drainages, larger perennial streams with at least 10 cfs of stream flow (generally 4 th order or larger); lakes and reservoirs.
Rocky Mountain Bighorn Sheep <i>Ovis Canadensis canadensis</i>	No	No	Prefer Steep rocky cliffs with adequate forage, water, and lambing grounds within proximity.

V. Consultation History: There was a Kerber-Antero Timber sale in the project area in 1985-86, but no known consultation history has been found in association with the project.

VI. Survey/Occurrence Information: Mosquito Lake and its surrounding wetlands (3), fens (2) and terrestrial habitat have been surveyed each summer since 2009 for suitable habitat and wildlife occupancy for TES species. No TES species have been detected, but suitable habitat does exist for several TES species (in table 2) and it is possible that occasional use may occur. This analysis is therefore being conducted under the assumption that the habitat is occupied at least on a periodic basis.

VII. Analysis of Effects:

A. Landscape Effects Analysis: Mosquito Lake is a small natural lake at the base of Sheep Mountain that is slowly converting to a wetland. The lake's outlet is downcutting and draining the lake. Fish have already disappeared from the lake and will likely lose all aquatic life within a few decades. Project activities are expected to increase water depth and arrest continued downcutting of the lake's outlet. A 50' parking area will be constructed at the end of Upper Kerber Creek Road where approximately 30-40 spruce trees will need to be removed to meet project objectives.

B. Species Effects Analysis

CANADA LYNX (Life history and Habitat needs)

Canada lynx in the southern Rocky Mountains are found at elevations ranging from 8,000-11,500 feet. They prefer mesic coniferous forest with cold snowy winters that contain their main prey species, snowshoe hare. Spruce-fir habitats that provide green ground level coniferous material are generally those habitats selected by snowshoes and thus lynx. Snowshoe hare prefer habitats with a strong subalpine fir component, due to their abundance of ground level green boughs, providing both food and cover. Young stands of lodgepole pine can also provide suitable habitat until self-pruning raises green boughs beyond the snowshoes reach for food and cover. Lower montane zones are generally dominated with a mixture of Douglas fir, ponderosa pine, bristle cone pine and quaking aspen. Although these zones are generally below normal lynx habitat, they provide important connective habitat for dispersal and winter foraging opportunities. Riparian zone are also frequently used for foraging activities. Lynx in the southern Rocky Mountains subsist on lower snowshoe hare densities than farther to the north. As a result they prey on a broader range of prey species and have larger home ranges than northern individuals (Ruediger et al. 2000). The lynx's diet throughout its southern range (Colorado) is believed to be more diverse than northern ranges, including squirrels, microtines, grouse, cottontail rabbits, other species of hares and ptarmigans. Lynx research in Colorado conducted by the Colorado Division of Wildlife has determined that lynx are concentrating a majority of their activities in riparian and mature spruce-fire habitat types. Concentrations of these habitats are dispersed across the Forest. Young dense aspen stands do on occasion provide summer snowshoe hare habitat, but generally only when adjacent to dense spruce-fir stands. Mature aspen stands on the other hand, are not considered hare habitat and especially when surrounded by open parkland. Denning habitat in the Southern Rockies is likely to occur most often in late-successional spruce-fir habitats with substantial amounts of low vegetation and large diameter woody debris on the forest floor, frequently found on north to northeast exposures.

Colorado Parks and Wildlife survey results of lynx dens from 2003-2005 revealed all dens in high-elevation Engelmann spruce/subalpine fir forests in areas of extensive downfall. Elevations at the dens have ranged from 10,226 to 11,765 feet. The Rio Grande National Forest is within the core release area and denning has been documented on the Forest, but not in the vicinity of the project area.

a) Area of Influence: The area of influence is essentially the sediment deposit site, which is also the proposed parking area site. The project will require the removal of 20-30 spruce trees to accommodate dredging and parking lot construction operations. This represents the loss of < 1 acre of snowshoe hare habitat that may contribute to winter foraging habitat. The Bonanza LAU contains 48,895 acres of lynx habitat. The loss of < 1 acre of habitat is not measurable and considered discountable as having a negative effect on lynx. Tree removal may reduce foraging habitat for this species, but the number of trees is considered discountable compared to overall available habitat. Canada Lynx are not known to have a permanent residence in the project area, but may pass through the area on occasion (Theobald et al 2011).

b) Project Site: Site conditions are essentially the same as the area of influence. Lynx prey primarily on snowshoe hare, which do exist in the project area.

c) Effects Analysis:

Direct Effects – Direct habitat effects are expected on Canada Lynx as a result of 20-30 spruce tree removals to create a permanent parking area, but project activities will result in the permanent loss of < 1 acre of primary lynx habitat. Dredging operations may also result in lynx avoidance behavior from the project area for a couple of weeks, if utilization is occurring in the area. However, total effects to lynx and their habitat are expected to be so small when compared to the LAU as to be discountable.

Indirect Effects – Habitat loss to the construction of a parking lot attached to the existing road is not expected to negatively affect snowshoe hare numbers in the project area. Visitor use of the Mosquito Lake area from June to September is expected to increase upon completion of the proposed project. However, recreational fishing activities are not expected to result in avoidance of the project area by lynx. Mosquito Lake is one of the District's more remote locations with large undisturbed areas of forest surrounding it. As a result, affects are considered to be so small as to be discountable.

Cumulative Effects – Additional visitor use at Mosquito Lake is expected as a result of restored fishing opportunities. Estimates of visitor use are expected to increase from 104 visits/year to 312 visits / year, primarily from June to September. Visitor activity will be focused around the lake perimeter. Recreational fishing activity is not expected to result in avoidance of the project area by lynx. Occasional winter access by snowmobile to Mosquito Lake currently occurs via the primary access road. However, due to any lack of any grooming or maintenance in the area, visits are rare and no increase in snowmobile visits are expected as a result of the project as proposed. Mosquito Lake is set near the Continental Divide which provides a de facto backcountry setting for the areas wildlife. As a result, project effects are not expected to negatively affect lynx or their habitat.

d) Conservation measures: Notify the District Biologist of any Canada Lynx sightings in the project area as soon as possible.

e) Effects Determination

Summary: Based on this analysis and the Inter-Agency Southern Rockies Lynx Project Decision Screens (2010), this project qualifies under the Pre-Screened Activities and Effects Determinations

section as a “**Wildlife and fisheries habitat improvements with tree removal ≤ 2 acres – NLAA**”. An additional review of this project’s screen pathways may be reviewed in Appendix A of this report. Based on the analysis discussed above I determine that as proposed, this project “may affect, but is not likely to adversely affect” the Canada lynx.

WESTERN BOREAL TOAD (Life history and Habitat needs)

The boreal toad occurs throughout the mountainous portion of Colorado, with the exception of the Sangre De Cristo Range, Wet Mountains, and Pikes Peak region. Recent information by the Colorado Division of Wildlife (CDOW) indicates that it occurs almost exclusively above 7,500 feet and can be found at elevations up to at least 12,500 feet (USDA 2007). The Boreal toad is currently listed as a Federal candidate species (USFWS 2011).

The distribution of the boreal toad is restricted to areas with suitable breeding habitat in lodgepole pine, spruce-fir forests and alpine meadows. Breeding habitat includes lakes, marshes, ponds, and bogs with a sunny exposure and quiet, shallow water. These may include the edges of large and small lakes, beaver ponds, glacial kettle ponds, roadside ditches and human excavations, and small puddles (Hammerson 1999). Rarely are boreal toads known to lay eggs in streams. Eggs are usually deposited in relatively warm exposed water not more than six inches deep (Hammerson 1986). Once metamorphosed, the distribution and movement of young toads is restricted by available moist habitat, and they are often found in wetlands adjacent to the breeding site (Hammerson 1999). During the summer adult toads may move considerable distances from breeding sites. During the winter, however, they are primarily restricted to underground chambers, beaver dams, and other sites adjacent to water. Recent telemetry data indicates that adult toads may spend up to 90 percent of their time in upland montane forests and rocky areas, with an affinity for locations that contain seeps and springs (Jones 2003).

Existing information indicates that there are only 15 locations on the Forest where the boreal toad occurs or occurred historically. On-going surveys of historic sites suggest that there has been a dramatic decrease in local boreal toad populations over time and that it is currently rare and perhaps in danger of extirpation on the Forest (Fetkavich 1994, Husung and Alves 1997, 1998). Currently, the only locations where stable breeding populations seem to occur are around the Cliff Creek/Jumper Creek site and the Trout Creek system on the Divide District (Husung and Alves 1998, Livo 2002). These locations are in close proximity to each other and to several historic sites and may represent the only primary boreal toad breeding areas remaining on the Forest. The last reported sightings on the Saguache District were reported at Miners Creek in 1995 and 1998.

a) Area of Influence: Includes Mosquito Lake and a small wetland on the south-east corner of the lake. All of the wetlands in the Mosquito Lake area are currently providing suitable but unoccupied Boreal Toad habitat,

b) Project Site: Site conditions are essentially the same as the area of influence.

c) Effects Analysis

Direct Effects- No direct effects are expected as a result of the Mosquito Lake Restoration Project due to a lack of occupancy of Boreal toads on the Saguache District or in the project area.

Indirect Effects - No indirect effects are expected as a result of the Mosquito Lake Restoration Project due to a lack of occupancy on the Saguache District or in the project area. .

Cumulative Effects – No cumulative effects are expected as a result of the Mosquito Lake Restoration Project due to a lack of occupancy on the Saguache District or in the project area.

d) Conservation Measures: No conservation measures are necessary for the protection of Boreal Toads or their habitat since there is no occupancy at this time.

e) Effects Determination:

Summary: Based on the analysis discussed above, I determine that as proposed, this project will have “No Impact” on Western Boreal Toad.

BOREAL OWL (Life History and Habitat Needs)

Boreal owls are closely related with spruce/fir zone forests throughout their range (Clark et al. 1989). They are year-round residents that use similar habitats during all seasons. Mature forests are necessary for nesting due to their requirement for large-sized snags to serve as nesting cavities. The boreal owl is a secondary nester and is dependent upon woodpecker cavities and to a lesser extent on natural cavities in large trees for nesting. Home range sizes in Colorado average 3,600 acres with considerable overlap between males (Palmer 1986). They are very mobile predators and frequently traverse much of their home range in the course of 2-3 days or weeks (Hayward et al. 1993). Roosting generally occurs in mature spruce-fir forests along branches close to the boles of trees. Winter roosts show little pattern, but summer roosts usually occur in cool micro-sites (Clark et al. 1989).

Boreal owls frequently use pole-sized stands for hunting. They will also use openings where perches are available along forest edges or wetlands. This is especially true in spring when snow cover is still present under the forest canopy, but openings have melted. Boreal owls forage using sit and wait tactics from perches, as opposed to pursuit hunting (Hayward et al. 1993). Small mammals are preferred prey items, especially the red-backed vole, which makes up 25 to 50 percent of their diet (Clark et al. 1989). Boreal owls are opportunistic hunters with a varied summer diet that includes insects, jumping mice, chipmunks, birds, pocket gophers, shrews, deer mice and voles. Boreal owls are generally tolerant of human activities that potentially cause direct disturbances in other raptor species.

Only one boreal owl has been located on the Saguache District to date. This observation occurred in 1995 as part of the Mountain lion/Lookout timber sale survey in the Carnero Pass area. Additional surveys within the analysis area have been limited and unsuccessful.

a) Area of Influence: The area of influence is essentially the sediment deposit site or proposed parking area and a few trees in the 2-track area. The project will require the removal of 30-40 spruce trees to accommodate the parking area and vehicle access from the road to the lake. Tree removal will reduce perching and foraging habitat for this species, due to the loss of trees and prey habitat on the ground to the parking lot construction. The number of trees to be removed is considered insignificant compared to overall available habitat. No records of boreal owl exist in the area, but occupancy within the area is possible.

b) Project Site: Site conditions are essentially the same as the area of influence.

c) Effects Analysis:

Direct Effects- None of the proposed tree removals have nesting cavities. Therefore direct effects are expected to be limited to < 1ac. of habitat as a result of project activities. Based on remaining available habitat, this is considered a discountable effect.

Indirect Effects – Tree removals will represent a small permanent loss of foraging habitat as the result of constructing a parking lot. However, based on the number of proposed tree removals, effects are considered insignificant for this species.

Cumulative Effects – Boreal owls generally are not disturbed by human activity and are therefore not expected to be negatively affected by primarily recreational fishing. Project activities are not expected to have a significant habitat effect on this species either.

d) Conservation measures: No conservation measures are deemed necessary for the protection of Boreal owl or their habitat at this time.

e) Effects Determination:

Summary: Based on the analysis discussed above I determine that as proposed, this project “May adversely Impact Individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend toward federal listing” for the Boreal owl.

OLIVE-SIDED FLYCATCHER (Life history and Habitat needs)

The olive-sided flycatcher is a neotropical migratory bird species that breeds exclusively in the coniferous forests of North America and winters in Central and South America. In Colorado, the olive-sided flycatcher is a summer resident that occurs in mountainous areas at elevations of 7,000 to 11,000 feet (Andrews and Righter 1992). It occurs primarily in mature spruce-fir and Douglas fir coniferous forest habitats and, less often, in other coniferous forests types. They also occur in mixed-aspen communities in Colorado, although less abundantly than in coniferous forest types (Scott and Crouch 1988, Jones 1998).

The olive-sided flycatcher is most often associated with forest openings, forest edges near natural openings, or open to semi-open forest stands (Altman and Sallabanks 2000). Its presence in early successional forest appears to be dependent on available snags or residual live trees for foraging and singing perches. The olive-sided flycatcher displays a preference for riparian areas and is frequently found along the wooded shores of streams, lakes, rivers, beaver ponds, etc., where natural edge occurs and standing dead trees are often present (Altman and Sallabanks 2000). This relationship is most likely due to the higher food abundance in these areas, which for the flycatcher is almost exclusively flying insects. Particularly important prey species are bees, flies, moths, grasshopper, and dragonflies (Bent 1942). The olive-sided flycatcher also displays a close relationship with areas of burned forest. This relationship has been displayed throughout its range and may be due to the creation of forest openings, increased edge at the interface between live and dead trees, and the availability of snags (Altman and Sallabanks 2000). The olive-sided flycatcher was also noted as one of 15 species most abundant in early post-fire communities in the northern Rocky Mountains, and was suggested to be relatively restricted to early post-fire conditions (Hutto 1995).

The Forest database provides two records of olive-sided flycatchers occurring on the Divide District in spruce-fir habitats. In addition, Cheron Ferland reported hearing an olive-sided flycatcher within the Alder-Silver Allotment up Alder Creek while conducting goshawk surveys in 2003 (Ferland, pers. comm. 2005).

Information from the Colorado Breeding Bird Atlas detected olive-sided flycatchers in several atlas blocks on all districts of the Forest (Kingery 1998). This effort led to the determination that the flycatcher is a confirmed breeder on the Saguache District, and a possible breeder on the Divide and Conejos Peak districts. Rawinski (2001) also notes that it is an unusual, but regularly occurring species and likely breeder in the spruce-fir zone. No olive-sided flycatchers were detected in the Mosquito Lake area from 2009-2011.

a) Area of Influence: The area of influence is essentially the sediment deposit site, which is also the proposed parking area site. The project will require the removal of 30-40 spruce trees to accommodate the parking area and vehicle access from the road to the lake. Tree removals may reduce nesting and perching habitat for this species, but the number of trees is considered insignificant compared to overall available habitat. No records of olive-sided flycatcher exist in the area, but occupancy within the area is possible.

b) Project Site: Site conditions are essentially the same as the area of influence.

c) Effects Analysis:

Direct Effects: Direct effects are expected to be limited to < 1ac. of habitat as a result of project activities. Based on remaining available habitat, this is considered a discountable effect. The project area does not appear occupied at this time.

Indirect Effects: Indirect effects may include the removal of some perch habitat. However, since no trees around the lake will be removed, the removal of high quality perch habitat is unlikely. Project activities are also expected to eliminate potential future foraging and nesting habitat at the parking area site.

Cumulative Effects: No cumulative effects are expected as a result of project activities for this species because of the minor amount of habitat involved.

d) Conservation Measures: Avoid the removal of any active nesting tree within the project area.

e) Effects Determination:

Summary: Based on the analysis discussed above I determine that as proposed, this project “*May adversely Impact Individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend toward federal listing*” for Olive-sided flycatcher.

NORTHERN GOSHAWK (Life history and Habitat needs)

In Colorado, the northern goshawk occurs throughout all of the mountainous and foothill areas although population densities may vary (Barrett 1998). Reynolds et al. (1982) referred to the goshawk as a forest generalist due to its use of all major forest types (coniferous, deciduous, and mixed), ages, structural conditions, and successional stages. This diversity in utilized habitat is believed to sustain a wider range of prey species. It preys on small to medium sized birds and mammals (thrushes to hares). Goshawks generally nest in older-aged stands that have a high density of large trees, high tree canopy cover, and high basal areas. Nests are generally located on north-facing slopes and are often near water. Nests are usually located in large aspen trees although large conifers are also occasionally used.

a) Area of Influence: The area of influence is essentially the sediment deposit site, which is also the proposed parking area site. The project will require the removal of 20-30 spruce trees to accommodate the

parking area and vehicle access from the road to the lake. Tree removals may improve foraging habitat conditions for this species, but the number of trees is considered insignificant compared to overall available habitat. No record of goshawk occupancy exists in the area, but occupancy within the area is possible.

b) Project Site: The project site contains no known goshawk nesting territories, but may be providing a small amount of foraging habitat.

c) Effects Analysis:

Direct Effects – No direct effects are expected as a result of project activities on goshawk.

Indirect Effects – The project site is located within potential goshawk foraging habitat and could reduce foraging habitat.

Cumulative Effects – Project activities are not expected to result in any measurable cumulative effects on goshawks because of the limited number of trees proposed for removal.

d) Conservation measures: Report any goshawk sightings or nest trees, in the project area, to the District biologist as soon as possible.

e) Effects Determination:

Summary: Based on the analysis discussed above I determine that as proposed, this project “May adversely Impact Individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend toward federal listing” for Northern Goshawk.

WOLVERINE (Habitat/Life History Needs)

Historically in the western United States, wolverines occurred in peninsular extensions of the Canadian habitat types that extend into the Rocky Mountains, Sierra Nevada, and Cascade Range. Historic populations of wolverine in Colorado were apparently never high, and their status at this time is undetermined (Fitzgerald et al. 1994). However, it is believed that the wolverine has been extirpated from the southern periphery of its range in Colorado (Nead et al. 1985). In the contiguous United States wolverines occur primarily in remote, high-elevation mountain basins and cirques, particularly during the breeding season (Banci 1994). Although montane coniferous forests may be suitable for winter foraging and raising of young during summer, these areas may only be useful if connected with subalpine cirque habitats required for natal denning, security areas, and summer foraging (Banci 1994).

The wolverine is a rare, wide-ranging, mid-sized carnivore of the weasel family (*Mustelidae*) that occurs in low densities across its range (Banci 1994). They have extensive home ranges and are highly mobile, with males and females able to disperse vast distances in a relatively short period of time (Copeland 1996, Magoun 1985). Female wolverines expend considerable energy to locate secure dens for their young, and such movements may be associated with attempts to deter predators (Banci 1994). There is also considerable evidence that female wolverines are prone to anthropogenic disturbance at both natal and maternal den sites, that they will quickly abandon when disturbed (Copeland 1996, Pulliainen and Myrberget 1968 in Heinemeyer et al. 2001). Wolverines are currently a Federal candidate species (USFWS 2011).

According to Nead et al. (1985), there are 22 records representing 25 wolverines documented in the literature that were collected in Colorado between 1871 and 1919. Since that time, three more specimens have been reported in or near Colorado, the latest being an adult male trapped near Cheyenne, Wyoming in April 1996. The biological record is confounded by the escape from the Cheyenne Mountain Zoo (near Colorado Springs, CO) of six wolverines from 1964 to 1986.

Local survey efforts were conducted specifically for wolverine on the Rio Grande National Forest from 1992 through 1995 by the Colorado Division of Wildlife (Kenvin 1992, 1993, 1995). These efforts focused on the alpine and spruce-fir habitat types and included infra-red camera stations, snow tracking routes, hair snag stations, and aerial surveys. Additional wolverine surveys were conducted in 1990-91 by a consulting firm in the Wolf Creek Pass area (Thompson et al. 1992). None of these surveys were successful in detecting wolverine. However, the Saguache District was not sampled with any of these survey efforts.

a) Area of Influence: The area of influence is a several acre area surrounding the lake. Wolverines are very susceptible to anthropogenic disturbance and construction activities and increased recreational use of the area is likely to result in an avoidance of the area by potential wolverine.

b) Project Site: Site conditions are essentially the same as the area of influence.

c) Effects Analysis:

Direct Effects – No direct effects are expected as a result of project activities since wolverines are not known to occupy the Rio Grande National Forest at this time.

Indirect Effects - No indirect effects are expected as a result of project activities since wolverines are not known to occupy the Rio Grande National Forest at this time.

Cumulative Effects – No cumulative effects are expected as a result of project activities since wolverines are not known to occupy the Rio Grande National Forest at this time.

d) Conservation Measures: No conservation measures are deemed necessary for this species at this time.

e) Effects Determination:

Summary: Based on the analysis discussed above, I determine that as proposed, this project will have “No Impact” on Wolverine.

AMERICAN MARTEN (Life history and Habitat needs)

In Colorado, American martens inhabit spruce-fir and most lodgepole pine forests, alpine tundra, and occasionally lower-elevation montane forests (Fitzgerald et al. 1994). American martens are generally found in late-successional spruce-fir forests that contain complex woody structure near the ground. This is due to a combination of preferred factors such as large tree size, long fire return intervals, live branches on the lower boles of trees, abundant coarse woody debris and high moistures levels within these stands. Saguache’s mixed conifer and lodgepole pine stands are generally too dry to meet this type of habitat selection criteria. However, martens will occasionally forage in dryer stands such as lodgepole if it falls within their territory and contains suitable prey. Marten select against ponderosa pine stands in the Rocky

Mountains and other sites with little physical structure near the ground (Buskirk 2002). These observations suggest that primary marten habitat on the Rio Grande National Forest is closely associated with late successional spruce-fir. Based on the Forest GIS query used for this analysis, 4 of 42 site locations (10%) identified as marten habitat occur within the mixed-conifer zone or on the boundary between mixed-conifer and spruce-fir. The remainder (90%) of the locations occurred within spruce-fir, where ground-level coarse woody debris and other old forest attributes are most abundant.

a) Area of Influence: The area of influence is essentially the sediment deposit site, which is also the proposed parking area site. The project will require the removal of 20-30 spruce trees to accommodate the parking area and vehicle access from the road to the lake. Tree removals may reduce habitat for this species, but the number of trees is considered discountable compared to overall available habitat. American marten are not known to occupy the project area, but occupancy is possible.

b) Project Site: Site conditions are essentially the same as the area of influence. This species preys primarily on pine squirrels, which do exist in the project area.

c) Effects Analysis:

Direct Effects – Direct effects are expected to be the result of < 1 ac. of habitat due to project activities on American marten.

Indirect Effects - Project activities are expected to eliminate a small amount of prey habitat and therefore foraging habitat at the parking area site.

Cumulative Effects – The addition of a parking area to the Upper Kerber Creek Road may have a small cumulative effect in addition to the existing road on foraging habitat for this species. However, project activities are not expected to be significant given the minor amount of area involved. .

d) Conservation measures: Notify the District Biologist of any American marten sightings in the project area.

e) Effects Determination

Summary: Based on the analysis discussed above I determine that as proposed, this project “May adversely Impact Individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend toward federal listing” for American Marten.

VIII. Conservation Measures (*discretionary measures that could further minimize effects or conserve species; required project design criteria should be part of project description, analyzed in effects section, and part of effects determination basis*)

1) Report any boreal toad, goshawk, or American marten sightings in the project area, to the District biologist as soon as possible. Based on the type of sighting reported, the addition of an appropriate conservation measure, if needed, will then be determined.

IX. Determination and Conservation Measures Summary:

Table 3: Threatened and Endangered Species Determination Summary

Species	Determination	Rationale	Conservation Measures
Canada lynx (T) <i>Lynx canadensis</i>	NLAA	Suitable habitat	Yes
Mexican spotted owl (T) <i>Strix occidentalis lucida</i>	NE	No suitable habitat	No
Southwestern willow flycatcher (E) <i>Empidonax trailii extimus</i>	NE	No suitable habitat	No
Uncompahgre fritillary butterfly (E) <i>Boloria acrocynema</i>	NE	No suitable habitat	No

NE – No Effect

NLAA – May Affect, Not Likely to Adversely Affect

L AA – May Affect, Likely to Adversely Affect

Table 4: Sensitive Species Determination Summary

Species List	Determination	Rationale	Conservation Measures
INSECTS			
Great Basin silverspot butterfly <i>Speyeria nokomis nokomis</i>	NI	No suitable habitat	No
AMPHIBIANS/FISH			
Boreal toad <i>Bufo boreas boreas</i>	NI	No occupancy	No
Rio Grande cutthroat trout (FC) <i>Oncorhynchus clarkii virginalis</i>	NI	No occupancy	No
Rio Grande chub <i>Gila pandora</i>	NI	No suitable habitat	No
Rio Grande sucker <i>Catostomus plebeus</i>	NI	No suitable habitat	No
Northern leopard frog <i>Rana pipiens</i>	NI	No suitable habitat	No
BIRDS			
Bald Eagle <i>Haliaeetus leucocephalus</i>	NI	No suitable habitat	No
Black swift <i>Cypseloides niger</i>	NI	No suitable habitat	No
Boreal owl <i>Aegolius funereus</i>	MI	Suitable habitat	Yes
Burrowing owl <i>Athene cunicularia</i>	NI	No suitable habitat	No
Ferruginous hawk <i>Buteo regalis</i>	NI	No suitable habitat	No
Flammulated owl <i>Otus flammeolus</i>	NI	No suitable habitat	No
Sage sparrow <i>Amphispiza belli</i>	NI	No suitable habitat	No
Brewer's sparrow <i>Spizella breweri</i>	NI	No suitable habitat	No
Northern goshawk <i>Accipiter gentiles</i>	MI	Suitable foraging habitat	Yes
Lewis's woodpecker <i>Melanerpes lewis</i>	NI	No suitable habitat	No
Loggerhead shrike <i>Lanius ludovicianus</i>	NI	No suitable habitat	No
Olive-sided flycatcher <i>Contopus cooperi</i>	MI	Suitable habitat	Yes
Northern harrier <i>Circus cyaneus</i>	NI	No suitable habitat	No
American peregrine falcon <i>Falco peregrinus anatum</i>	NI	No suitable habitat	No

Yellow-billed cuckoo (FC) <i>Coccyzus americanus</i>	NI	No suitable habitat	No
White-tailed ptarmigan <i>Lagopus leucurus</i>	NI	No suitable habitat	No
Gunnison sage-grouse (FC) <i>Centrocercus minimus</i>	NI	No suitable habitat	No
Mountain plover <i>Charadrius montanus</i>	NI	No suitable habitat	No
MAMMALS			
Wolverine (FC) <i>Gulo gulo luscus</i>	NI	Suitable habitat	Yes
American marten <i>Martes Americana</i>	MI	Suitable habitat	Yes
Townsend's big-eared bat <i>Corynorhinus townsendii townsendii</i>	NI	No suitable habitat	No
Fringed myotis <i>Myotis thysanodes</i>	NI	No suitable habitat	No
Gunnison's prairie dog (FC) <i>Cynomys gunnisoni</i>	NI	No suitable habitat	No
New Mexico Meadow Jumping Mouse (FC)	NI	No Suitable habitat	No

No Impact - (NI)

May Impact – (MI) May Impact Individuals, but is not likely to cause a trend towards Federal listing or result in loss of viability in the planning area.

Likely Impact – (LI) Likely to result in a trend towards federal listing or loss of viability in the planning area.

Beneficial Impact – (BI) use of BI requires wholly beneficial without any adverse effects.

IX. MIS Considerations:

The Revised Forest Plan, as amended, lists 9 species as MIS on the Forest (Table 5). All MIS were evaluated as to whether the species or their habitat was present and to what extent project activities may affect the species or their habitats, if present.

Table 5: RGNF MIS Species

Species	Habitat type/acres at Forest level	Habitat present	Project affect habitat	Acres affected	Percent habitat affected at Forest level
		Yes/No	Yes/No		
Lincoln's Sparrow <i>Melospiza lincolnii</i>	Willow riparian (11,680 acres)	No	No	None	None
Wilson's Warbler <i>Wilsonia pusilla</i>	Willow riparian (11,680 acres)	No	No	None	None
Pygmy Nuthatch <i>Sitta pygmaea</i>	Ponderosa pine (38,000 acres)	No	No	None	None
Brown Creeper <i>Certhia americana</i>	Mature spruce-fir/mixed conifer (634,000 acres)	Yes	Yes	< 1.0 ac.	Insignificant
Hermit Thrush <i>Catharus guttatus</i>	Mature spruce-fir/mixed conifer (634,000 acres)	Yes	Yes	< 1.0 ac.	Insignificant
Vesper Sparrow <i>Poocetes gramineus</i>	Grasslands and montane shrublands (222,000 acres)	No	No	None	None
Rio Grande Cutthroat Trout <i>Oncorhynchus clarkii virginalis</i>	Aquatic systems (1,050 stream miles and 1,200 lake acres)	No	Yes	Restore 2 ac. of lake habitat.	Insignificant
Elk <i>Cervus elaphus</i>	All LTAs on the Forest	Yes	Yes	< 1.0 ac.	Insignificant
Mule Deer <i>Odocoileus hemionus</i>	All LTAs on the Forest	Yes	Yes	< 1.0 ac.	Insignificant

The Mosquito lake Restoration Project is not expected to have a significant impact on any Forest MIS. Project activities will result in the removal of 30-40 spruce trees directly adjacent to FS Road 862.2D.

The negative impact of these tree removals in comparison to the number of available trees in the area and across the Forest is not measurable. As for the dredging of Mosquito Lake, project activities are expected to provide suitable habitat conditions for trout that have not existed since the 1970's. Overall project activities and resulting impact to Forest MIS is considered insignificant.

The scale and extent of this project is such that it would not have a discernible effect on any of the Forest's MIS population trends. Rather, it is the cumulative effects of multiple projects that are expected to impact the quality and quantity of MIS habitats, their spatial distribution over the Forest, and consequently population trends. Accordingly, Forest level monitoring is deemed to be more appropriate for the scale, extent and timing of the effects of the proposed activities.

X. Contacts

Person contacted and affiliation:	Date:	Regarding:

Prepared By and Date: Dwight A. Irwin 5/8/12

Reviewed By and Date: _____

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APPENDIX A:








Photo: Jackson/Outing
Herald-Examiner/Examiner

Inter-Agency Southern Rockies Lynx Project Decision Screens

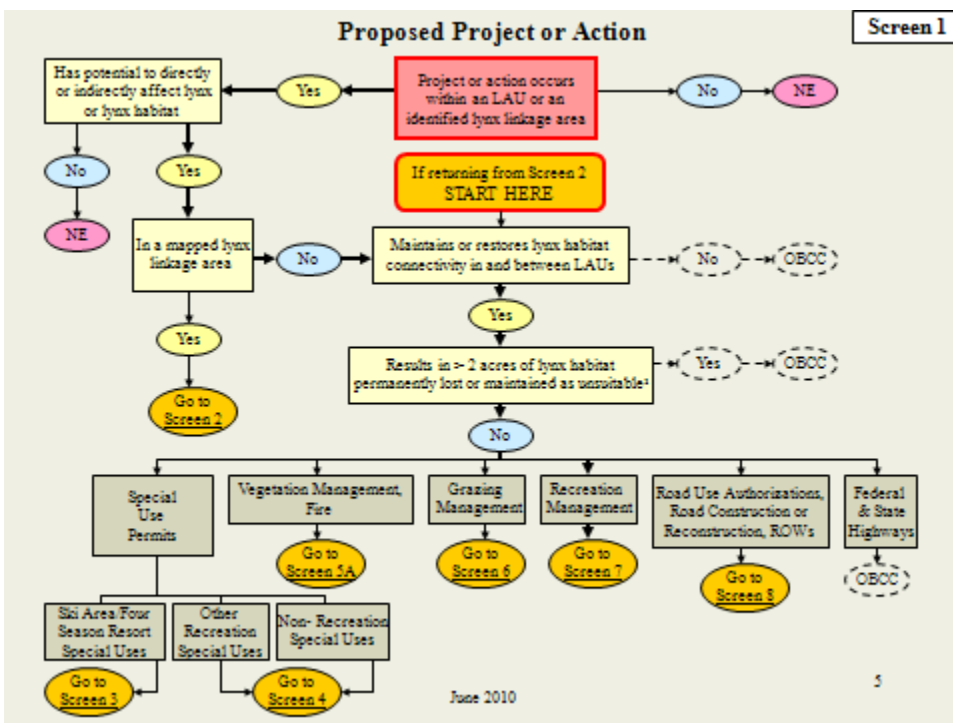
 U.S. Fish and Wildlife Service
Colorado Field Office, Lakewood, CO

 Bureau of Land Management
Colorado State Office, Lakewood, CO

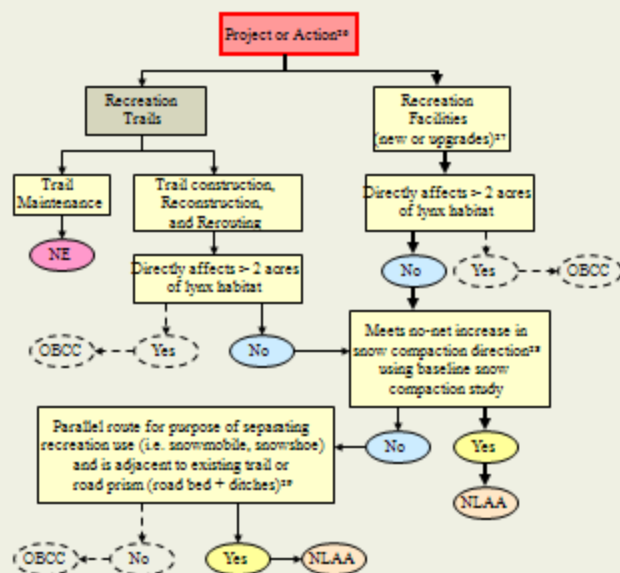
 U.S. Forest Service
Rocky Mountain Regional Office
Lakewood, CO

 National Park Service
Intermountain Regional Office
Lakewood, CO

June 2010



Recreation Management



June 2010

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SOUTHERN ROCKIES LYNX PROGRAMMATIC SCREENS AND SECTION 7 AGREEMENT

PROJECT COMPLIANCE CHECKLIST

National Forest Rio Grande Ranger District Saguache

Project Name / No. Mosquito Lake Restoration Project

Brief Description of Project Type and Activities

Project includes the dredging of 7500 cubic yards of sediment from Mosquito Lake to restore trout to the lake and using the dredge material to help construct a 50 ft. parking area at the end of FS Road parking area 862.2D for public access.

LAU(s) Bonanza

BE/BA/Compliance Checklist Completion Date 5/8/2012 Compliance Confirmation Date _____

Project Biologist Dwight A. Irwin

Agreement Criteria and Conditions: *(initial each)*

1. This programmatic concurrence is expressly limited to those actions with effects to listed species that are insignificant or discountable as defined in the Service's Section 7 Consultation Handbook, based on site specific information and analysis. This programmatic concurrence applies to USFS projects or actions for which the project as proposed clearly leads a qualified biologist to a determination of "not likely to adversely affect." More complex projects, which do not clearly lead to a "not likely to adversely affect" determination, or those for which the project biologist determines there may be effects not accounted for in the screen, do not qualify for this programmatic concurrence. Such projects must be evaluated and submitted to USFWS for traditional individual or batched concurrence, or formal consultation as appropriate. Meets: Yes
 2. Application of the screens and determination of project effects on lynx, for compliance with section 7, must be approved by a qualified wildlife biologist assigned by the USFS. Meets: Yes
 3. In the event that a project or action proceeds under this programmatic concurrence and later results in any "take" of lynx or exceeds the conditions of this programmatic concurrence, the USFS must reinstitute consultation for that project or action with the USFWS. Meets: Yes
 4. This programmatic concurrence does not apply to management activities, individually or cumulatively, where the effects of the action exceed screen criteria for habitat that currently provides winter foraging opportunity for lynx or habitats that are currently regenerating to such conditions. This programmatic concurrence does not apply to management activities that are of a nature or magnitude, individually or cumulatively, that could compromise the function of a lynx analysis unit (LAU) (Ruediger et al.2000), as that may constitute "take" under section 9 of the Endangered Species Act and an adverse effect under section 7, requiring individual consultation. Meets: Yes
 5. Regardless of whether the project or action meets other criteria, this programmatic concurrence does not apply to any projects or activities that would result in long-term habitat loss in designated or identified landscape linkages, unless the proposed activity is consistent with a management plan for that linkage area that has been jointly agreed to by the USFWS and USFS. Meets: Yes
 6. The USFS shall submit in writing annual spreadsheets by September 15 (or other appropriate date as agreed upon) of each year summarizing by Forest the projects that were successfully screened and claimed under the blanket concurrence for the year. These spreadsheets shall be submitted by each Forest to the USFWS (Lakewood and Grand Junction) and Rocky Mountain Region Regional Office, Threatened and Endangered Species Program Leader. The USFS will also continue to conduct annual audits of a sample of projects screened by a date mutually agreed-upon by the USFWS and USFS. Meets: Yes
 7. For projects in Wyoming, USFS staff will provide updates on the use of the screens to the Level 1 Interagency Consultation Streamlining team for southern Wyoming. Updates should include a brief discussion at the Southern Level 1 Team meetings of the projects that were successfully screened and claimed under the blanket concurrence since the previous Level 1 meeting. Meets: N/A
- Was a BA/Consultation Summary Sheet completed before screening the project? (*check one*) YES X NO _____
- What was the final BA/Consultation Summary Sheet determination? (*check one*) No Effect _____ NLAA X
- Was the project pre-screened? (*check one*) NO _____ Pre-screen 1 _____ Pre-screen 2 X

Screen(s) Used (**Attach with pathway(s) used clearly marked**): Screen 1 + 7

"This action meets all of the conditions of the October 5, 2010, Programmatic Consultation Agreement and Blanket Section 7 Concurrence for Canada Lynx, between the Forest Service and

Fish and Wildlife Service affecting National Forests in Colorado and the Medicine Bow National Forest in Wyoming."

Dwight A. Irwin 5/8/2012
Project Biologist Date

Approving Biologist Date
(if also needed to meet R2 requirements)

Appendix C - Migratory Bird Report

MIGRATORY BIRD REPORT

The Migratory Bird Act (MBTA) of 1918 was passed to enforce a treaty between the United States, Mexico and Canada primarily due to the concern for poaching of migratory birds. Except as regulated by permit, it is unlawful under the Act for anyone at any time, by any means or in any manner, to pursue, hunt, export, import, transport or carry any migratory bird. Until recently, it was maintained that the MBTA was intended to address issues related to the hunting and poaching of migratory birds, but not habitat modification. However, inconsistent interpretations of the Act by federal agencies and contradictory rulings by various circuit courts left the issue regarding habitat modification unclear.

On January 10, 2001, Executive Order 13186 was signed and entitled “Responsibilities of Federal Agencies to Protect Migratory Birds”. The Executive Order states that “environmental analysis of Federal actions, required by NEPA or other established environmental review processes, shall evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of special concern.” The Executive Order further directs action agencies to develop and implement a Memorandum of Understanding (MOU) with the U.S. Fish and Wildlife Service that promotes the conservation of migratory birds. This MOU is currently under development as a means to reduce the direct, indirect and cumulative effects of land management activities on migratory birds, including those dealing with habitat modification.

Direction concerning landbird conservation in Forest Service Region 2 is to reference the 2009 Birds of Conservation Concern list produced by the U.S. Fish and Wildlife Service for Bird Conservation Regions (BCRs) when completing NEPA evaluations for project activities. Furthermore, Forest Service units are encouraged to interface with the State and Bird Conservation Region working groups for actions and objectives to pursue concerning migratory bird conservation. Bird Conservation Regions consist of a hierarchical framework of nested ecological units that allow for the use of multiple scale-specific approaches to on-the-ground management. Bird Conservation Regions encompass areas that become progressively more ecologically similar as the units are stepped-down to a smaller scale. At the smallest and most local scale, the physiographic area is used for bird conservation efforts. State groups such as local Partners-In-Flight chapters are the primary workforce involved with translating the BCR information into conservation action at the local scales.

There are 37 BCRs in North America with four of these occurring at least partially in Colorado. The Rio Grande National Forest occurs within the Southern Rockies Colorado Plateau Bird Conservation Region (BCR 16), which encompasses portions of Colorado, New Mexico, Arizona, Utah and Wyoming. Information from BCR 16 was synthesized for use in Colorado through the development of the Birds of Conservation Concern list (USDI Fish and Wildlife Service 2008 and the Colorado Landbird Conservation Plan (BCP). These Plans have been or are being developed by every state in the nation based on the individual physiographic areas encompassed by the BCR's. Thus at the finest scale of analysis, the Rio Grande National Forest occurs within the Southern Rocky Mountains Physiographic Area (Area 62) of the Southern Rockies Colorado Plateau Bird Conservation Region. The following are the Birds of Conservation Concern for BCR 16, their status within the project area, and projected influence from the South Saguache Range Management Project.

Table 16: FWS Birds of Conservation Concern for BCR 16, occurrence in the Project Area, and anticipated influence of the action alternative (2008).

Species	General Habitat	Occurrence in Analysis Area	Effect of Alternatives
Northern Harrier	Grasslands	No	No Effect. (No habitat present).
Swainson's Hawk	Grasslands	No	No Effect. (No habitat present).
Ferruginous Hawk	Prairie	No	No Effect. (No habitat present).
Golden Eagle	Cliffs/grasslands	No	No Effect. (No habitat present).
Peregrine Falcon	Cliffs	No	No Effect. (No habitat present).
Prairie Falcon	Cliffs	No	No Effect. (No habitat present).
Gunnison sage-grouse	Sagebrush	No	No Effect. (No habitat present).
Snowy Plover	Shorelines	No	No Effect. (No species present)
Mountain Plover	Prairie	No	No Effect. (No habitat present).
Solitary Sandpiper	Shorelines	No	No Effect. (No species present).
Marbled Godwit	Wetlands	No	No Effect. (No species present).
Wilson's Phalarope	Water bodies/Shorelines	No	No Effect. (No habitat present).
Yellow-billed Cuckoo	Deciduous Riparian	No	No Effect. (No habitat present).
Flammulated Owl	Ponderosa pine/snags	No	No Effect. (No habitat present).
Burrowing Owl	Plains/grasslands	No	No Effect. (No habitat present).
Short-eared Owl	Parks/grasslands	No	No Effect. (No habitat present).
Black Swift	Waterfalls/wet cliffs	No	No Effect. (No habitat present).
Lewis's Woodpecker	Riparian Cottonwood and Ponderosa pine	No	No Effect. (No habitat present).
Williamson's Sapsucker	Montane forests/snags	Possible	No Effect. (No cavity trees and minimal habitat removed)
Gray Vireo	Oak woodlands/scrub	No	No Effect. (No habitat present).
Pinyon Jay	Pinyon/Juniper	No	No Effect. (No habitat present).
Bendire's Thrasher	Rare spp. of arid areas	No	No Effect. (No habitat present).
Crissal Thrasher	No records in CO.	No	No Effect. (No habitat present).
Sprague's pipit	No records in CO.	No	No Effect. (No habitat present).
Virginia's warbler	Riparian scrub	No	No Effect. (No habitat present).
Black-throated gray warbler	Oak scrub/riparian	No	No Effect. (No habitat present).
Grace's warbler	Ponderosa pine	No	No Effect. (No habitat present).
Sage sparrow	Sagebrush	No	No Effect. (No habitat present).
Chestnut-collared longspur	Plains	No	No Effect. (No habitat present).

The Colorado Landbird Conservation Plan (Beidleman 2000) identified priority species and habitats for each physiographic area in the state based on the Partners-In-Flight species prioritization process. Priority habitats identified for the Southern Rocky Mountains Physiographic Area include alpine tundra, aspen, cliff/rock, high elevation riparian, lowland riparian, mixed-conifer, mountain shrubland, ponderosa pine, sagebrush shrubland, spruce-fir, and wetlands. All of these habitat types occur within the South Saguache Range Management analysis area, with spruce-fir being the most extensive. The priority habitats and species that occur within the project area are identified on the following page in Table 17.

Table 17: Priority habitats and species of the Southern Rocky Mountains province and their relationship to assessment for the South Saguache Range Analysis.

Priority Habitat Type	BCP Priority Species	BCP Potential Issues(s)	Potential Influence from Project Activities	Effect of Alternatives
Aspen	Red-naped sapsucker Purple martin Violet-green swallow	Grazing, snag habitat, Altered disturbance regimes	No issues identified.	No effect.
Cliff/Rock	Peregrine falcon Black swift	Rock climbing; mining	No issues identified.	No effect.
High Elevation Riparian	Cordilleran flycatcher American dipper MacGillivray's warbler Wilson's warbler	Grazing, Recreation impacts	No issues identified.	No effect.
Lowland Riparian	Lewis' woodpecker Lazuli bunting	Development, roads, grazing, recreation	No issues identified.	No effect.
Mixed Conifer	Blue grouse Williamson's sapsucker	Altered disturbance regimes, snags, timber mgmt.	Tree removals.	No known occupancy and minimal tree removals. Insignificant effect.
Ponderosa Pine	Band-tailed pigeon Flammulated owl Mexican spotted owl Lewis's woodpecker Grace's warbler	Timber management, snags, altered disturbance regimes, prescribed fire	No issues identified.	No effect.
Spruce/Fir	Boreal owl Olive-sided flycatcher Hammond's flycatcher	Timber management, snags, altered disturbance regimes	Tree removals.	No known occupancy and minimal tree removals. Insignificant effect

5.1 Summary of Effects on Migratory Birds: Only two of the seven priority habitats identified in the Colorado Landbird Conservation Plan for the Southern Rocky Mountains province (Beidleman 2000) occur within the Mosquito Lake Restoration Project Analysis Area. Overall project activities are expected to have a relatively minor impact on forest-dwelling birds. A majority of tree removals are saplings, but 33 mature trees are also planned or removal. In comparison to surrounding available habitat, project activities are considered insignificant. Recent bird surveys have identified few individuals in the project area. Spruce scheduled for removal will be surveyed for bird occupancy prior to removal. If occupancy is occurring, protection measures will be taken until nesting is complete.